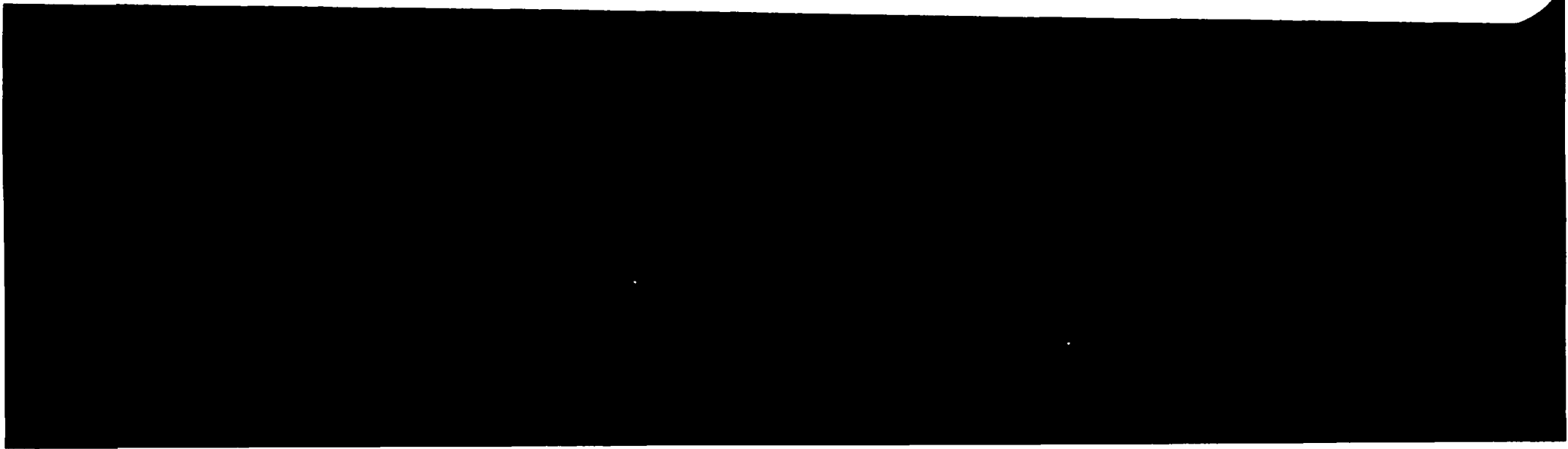


1044b UIC - EAST POPLAR OIL FIELD
ENFORCEMENT CASE SDWA 1431
Folder ID: 13616 1980 Privileged

Release in Full



Region 8



13616

HISTORY



EAST POPLAR UNIT WELL NO. 104

ROOSEVELT COUNTY, MONTANA

MURPHY CORPORATION - OPERATOR

WELL HISTORY

EAST POPLAR UNIT WELL NO. 104

EAST POPLAR UNIT WELL NO. 104

ROOSEVELT COUNTY, MONTANA

MURPHY CORPORATION - OPERATOR

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EAST POPLAR UNIT WELL NO. 104

SUMMARY OF WELL HISTORY

WELL NAME AND NUMBER:	East Poplar Unit Well No. 104
LOCATION:	NW SW SE Section 14, T28N, R51E
DRILLING UNIT:	160 Acres
WORKING INTEREST:	31.448470%
REVENUE INTEREST:	31.448470%
ELEVATION:	2220' K.E. = 2208' Ground
WELL HEAD MARKER:	RKE to top of flange on 9-5/8" x 5-1/2" Cameron Casing Head ~ 10.40'
DRILLING CONTRACTOR:	Zach Brooks Drilling Company
SPEUDED:	7:00 P.M., May 6, 1958
DRILLING RIG RELEASED:	6:00 P.M., May 24, 1958
COMPLETION CONTRACTOR:	Western Oil Well Service Company
COMPLETED:	June 8, 1958
TOTAL DEPTH:	5957' Schlumberger = 5947' Driller
P.B.T.D.:	5944.5'
CASING:	9-5/8" at 1019.58' with 400 sacks cement 5-1/2" at 5956' with 300 sacks cement
INITIAL PRODUCTION INTERVAL:	Perforated "C-3" Zone 5921'-5926' with Wireline dyna jet gun, 4 holes per foot.
TUBING:	2-3/8" at 5916.50'
INITIAL POTENTIAL:	Flowing 223 BFPD, 1% BS&W (221 BOPD, 2 BWPD) TFP ~ 75#
INITIAL ACID TREATMENT:	None
PERFORATIONS:	5921'-5926' "C-3" Zone
INITIAL FRAC TREATMENT:	None

GPU 710.104

DAMAGE RELEASE g/lv

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, in consideration of the sum of Four Hundred Eighty & no/100 Dollars (\$480.00), cash in hand paid by MURPHY OIL CORPORATION, the receipt of which is hereby acknowledged, does hereby release and forever discharge the said Murphy Oil Corporation, its successors and assigns, from all actions, suits, claims and demands whatsoever from and on account of damages to real or personal property in the West Half of Section 14, Township 28 North, Range 51 East (W/2 S14-T28N-R51E), Roosevelt County, Montana. In particular said parties are released and discharged from all damages along a pipeline right of way in the above described property which may have been caused by the improper maintenance of an oil pipeline and gathering system, to-wit, an oil leak along EPU-104 flow line.

And the undersigned covenants and agrees, for the consideration aforesaid, to protect and save harmless Murphy Oil Corporation, its successors and assigns, from any further loss, damage or expense on account of all claims, liabilities and injuries to the above described lands:


IN WITNESS WHEREOF, this Release is executed on this 23 day of

Oct., 1969.

BUREAU OF INDIAN AFFAIRS
OF THE UNITED STATES
DEPARTMENT OF INTERIOR

By


Superintendent
Fort Peck Agency


NOTARY PUBLIC for the State of Montana
Residing at Poplar, Montana
My Commission Expires July 15, 1972

JLP



INTER-OFFICE CORRESPONDENCE

\$480.00
in damage asked
for

FROM: M. T. James
TO: W. J. Thornton

LOC.: Poplar-P&E
LOC.: El Dorado-P&E

DATE: August 27, 1969
CARBONS TO:

SUBJECT: East Poplar Unit No. 104 Flowline

Enclosed you will find a letter from the Bureau Of Indian Affairs concerning oil leakage damage in the W $\frac{1}{2}$ Section 14, T28N, R51E, Roosevelt County, Montana.

Soil samples were taken from the area in question and submitted to the Bureau Of Indian Affairs Soil Laboratory. A copy of the Laboratory Data Sheet is enclosed.

The East Poplar Unit No. 104 flowline has been replaced with fiberglass, A.F.E. No. 9-1502.

M. T. James

MTJ/sb
enclosure

IN REPLY REFER TO:

Real Prop Mgmt
T&M 322



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

P. O. BOX 637
FORT PECK AGENCY
POPLAR, MONTANA 59255

9 October 1969

Mr. M. T. James
District Superintendent
Energy Oil Corporation
P. O. Box 547
Poplar, Montana 59255

Dear Mr. James:

On August 26, 1969, in compliance with your request, we transmitted to you a copy of Laboratory Data Sheet in support of our claim for oil leakage damage.

To date we have heard nothing further on our claim. Please advise what action is being taken.

Sincerely yours,

John R. Peckham
Superintendent

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

East Poplar Unit H Battery and Wells EPU Nos. 22, 32, 55, 101, & 104

The East Poplar Unit H Battery and the wells producing into the battery, EPU Nos. 22, 32, 55, 101, & 104, are onshore production facilities located in Roosevelt County, Montana, in the East Poplar Unit Oil Field. The field is about 6 miles North-east of Poplar, Montana, in Townships 28 and 29 North and Ranges 50 and 51 East.

The operator of the East Poplar Unit H Lease is Murphy Oil Corporation located at P. O. Box 547, Poplar, Montana 59255. The corporate headquarters are at 200 Jefferson Avenue, El Dorado, Arkansas, 71730.

The battery consists of a 8' x 27' vertical separator, a circulating pump with appropriate lines, and two 300 barrel steel welded tanks. The tanks are vented to the atmosphere and have unrestricted 4" overflow lines between tanks. An earthen pit of about 8,000 barrels capacity is located at the tank battery into which the separator or tanks may be emptied if needed for fluid storage.

All five wells flow and do not need well cellars or overflow pits.

The field flow lines and the well casing of each well are cathodically protected. The equipment is in excellent operating condition and there is no reasonable likelihood of a discharge or spill event.

The facilities are about 3.0 miles from Poplar River. The terrain dips gently West. The soil is sandy and the fields are under cultivation. Because of the distance to the river, the type of soil, and the terrain the 8,000 barrel pit at the tank battery is sufficient secondary containment for these facilities.

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

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The field is about 6 miles Northeast of Poplar, Montana, in Townships 28 and 29 North and Ranges 50 and 51 East.

The operator of the East Poplar Unit H Lease is Murphy Oil Corporation located at P.O. Box 547, Poplar, Montana 59255. The corporation headquarters are at 200 Jefferson Avenue, El Dorado, Arkansas 71730.

The foreman, Mr. Gerald Hagadone, is responsible for oil spill prevention at this facility. On each trip to the lease the pumper makes a visual inspection of all facilities and reports any malfunction to the foreman, Mr. Gerald Hagadone, and notes this malfunction on the ten day gauge report. There has been no reportable oil Spill Event during the twelve months prior to January 10, 1974.

The equipment is in excellent operating condition and there is no reasonable likelihood of a discharge or spill event.

The field flow lines and well casing of each well are cathodically protected.

Personnel are properly instructed in the operation and maintenance of equipment to prevent oil discharges, and applicable pollution control laws, rules and regulations. Each employee is given these instructions by the field foreman when they are employed. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan. The procedures are reviewed every six months by the field foreman with each employee. When changes occur in procedures, each employee is informed.

Fluid in the 8,000 barrel storage pit is pumped to the salt water disposal unit if the water is brackish as determined by chloride tests. If only fresh water is contained in the pit it is disposed of by placing on lease roads to control dust and compact the roads. Any oil in the pit is pumped back through the separator with the water being sent to the disposal well. Oil skims are burned by state permits. There are no outlets from the storage pit and all fluids must be pumped out.

The two 300 barrel tanks are steel and are welded construction. The tanks are vented to the atmosphere and have unrestricted 4" overflow lines between tanks.

All five wells flow and do not need well cellars or overflow pits.

The facilities are about 3.0 miles from the Poplar River. The terrain dips gently West. The soil is sandy and the fields are under cultivation. Because of the distance to the river, the type of soil, and the terrain the 8,000 barrel pit at the tank battery is sufficient secondary containment for these facilities.

The tanks are observed daily by the pumper. Periodically, the foreman checks the entire tank battery and producing wells closely. If any trouble is suspected, the facility is shut down, the tanks and/or separator are emptied and cleaned. The facility is then thoroughly inspected by service company personnel, repairs are made if needed and the unit is placed back into service.

Produced salt water is pumped to a field gathering system for injection into a salt water disposal well. The above ground facilities are observed daily by the pumper and inspected by the foreman closely on his visits to the lease.

All salt water disposal flowlines are cement asbestos lines. These lines are buried and the surface is observed daily by the pumper.

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature _____
Name _____
Title _____

CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR, Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Printed Name Of Registered Professional Engineer

(Seal)

Signature Of Registered Professional Engineer

Date _____

Registration No. _____ State _____

Contingency Plans For An Oil Discharge

East Poplar Unit H Battery and Wells EPU Nos. 22, 32, 55, 101, & 104

The field is visited twice daily by the pumper. Visual inspection is made on each facility on each visit to determine if any malfunction is occurring. The most likely potential oil discharges are checked thoroughly. Periodically, the field foreman, Mr. Gerald Hagadone, will conduct a close check of the entire facility.

The pumpers, Mr. Ferdinand Charette and Mr. Robert Atkinson, have been instructed in the operations and maintenance of equipment to prevent oil and water discharges and informed of the applicable pollution control laws, rules and regulations. If an oil discharge occurs, the pumper will immediately close the proper valves and/or shut down the production facility to stop the discharge. He will then call Mr. Gerald Hagadone who will in turn inform Mr. Bill Brown, District Superintendent. If needed, the proper state and federal agencies will be notified by Mr. Brown. The discharged oil will be reclaimed or disposed of by approved engineering procedures and in accordance to law.

In the event discharged oil collects on standing water such as a stock pond or rain water standing in a low spot, the oil will be pumped into a tank truck. The skim of oil left on the water will be removed by an oil skimmer owned by Murphy Oil Corporation. The skimmer can be towed to the field within an hours time.

If the discharge is in excess of 50 barrels of oil, the Montana Department of Health and Environmental Sciences in Helena will be notified by Mr. Brown.

If a Spill Event occurs as defined by federal law, the Environmental Protection Agency in Denver, Colorado will be notified by Mr. Brown.

Telephone numbers and personnel to be notified in case of an oil discharge are as follows:

Phone Numbers as listed on other copies will be included on final copy.

COPY

206-60799

FROM

MURPHY CORPORATION
EL DORADO, ARKANSAS

March 5, 1955

Address Reply To:
BEHNER BUILDING
3rd Ave. North and 29th St.
BILLINGS, MONTANA

Mr. Austin Buckles
Fort Peck Indian Agency
Poplar, Montana

Our Lease Number 3578
SE $\frac{1}{4}$ of Sec. 14-28N-51E
Roosevelt County, Montana

Dear Sir:

Pursuant to your recent request, we are enclosing a photo-
static copy of the captioned oil and gas lease.

Yours very truly,

MURPHY CORPORATION

By P. M. Walker
P. M. Walker
Division Landman

FMW:sr
Enclosure
cc: ✓ Mr. Zoller w/enclosure

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
Probate No. 29027-20 F.J.C.
228-89; 8215-47

OIL AND GAS MINING LEASE—ALLOTTED INDIAN LANDS

Assiniboine-Sioux TRIBE, STATE OF Montana

3578

THIS INDENTURE OF LEASE, made and entered into in quintuplicate this 27th day of February, 1950, by and between (Single)(129); Kate P. Redbear and Thomas Redbear(3589)(340) wife and husband; Alice Foote(Single)(2001); Mabel P. Bighorn and Jacob Bighorn(2448)(1672) wife and husband; Agnes S. Steel and William Steele(2015) wife and husband; Trivian M. Graves—minor(0-215); Austin R. Buckles and Audrey M. Buckles(2293) husband and wife No's (339)(3589)(2001)(2488) Brookton, Montana; No's(129)(2293)(0-215) Poplar, Montana; No's (2015) Portland, Ore., State of , allottee No. 481

(roll No.), of the Sioux Tribe of Indians, designated herein as lessor, and O.H. Murphy Co.

of El Dorado, State of Arkansas, herein designated as lessee:

WITNESSETH

1. Lessor, in consideration of a cash bonus of \$1897.60, paid to the Superintendent of the Indian Agency having jurisdiction, hereinafter called the superintendent, receipt of which is hereby acknowledged, and in consideration of rents and royalties to be paid, and the covenants to be observed as herein set forth, does hereby grant and lease to the lessee the exclusive right and privilege to drill for, mine, extract, remove, and dispose of all the oil and natural gas deposits in or under the following-

described tracts of land situated in the county of Roosevelt, State of Montana, and more particularly described as follows:

Township 28 North, Range 51 East M.P.M.
Sec 14 - SE 2

FORT PECK AGENCY

RECEIVED
DEC 5 1950
RECEIVED

160 containing acres more or less, together with the right to construct and maintain thereon all works, buildings, plants, waterways, roads, telegraph and telephone lines, pipe lines, reservoirs, tanks, pumping stations, or other structures necessary to the full enjoyment hereof for the term of 10 years from and after the approval hereof by the Secretary of the Interior and as much longer thereafter as oil and/or gas is produced in paying quantities from said land.

2. The term "oil and gas supervisor" as employed herein shall refer to such officer or officers as the Secretary of the Interior may designate to supervise oil and gas operations on Indian lands. The term "superintendent" as used herein shall refer to the superintendent or other official in charge of the Indian Agency having jurisdiction over the lands leased.

3. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.—To furnish such bond as may be required by the regulations of the Secretary of the Interior, with satisfactory surety, or United States bonds as surety therefor, conditioned upon compliance with the terms of this lease.

(b) Wells.—(1) To drill and produce all wells necessary to offset or protect the leased land from drainage by wells on adjoining lands not the property of the lessor, or in lieu thereof, to compensate the lessor in full each month for the estimated loss of royalty through drainage: *Provided*, That during the period of supervision by the Secretary of the Interior, the necessity for offset wells shall be determined by the oil and gas supervisor and payment in lieu of drilling and production shall be with the consent of, and in an amount determined by the Secretary of the Interior; (2) at the election of the lessee to drill and produce other wells: *Provided*, That the right to drill and produce such other wells shall be subject to any system of well spacing or production allotments authorized and approved under applicable law or regulations, approved by the Secretary of the Interior and affecting the field or area in which the leased lands are situated; and (3) if the lessee elects not to drill and produce such other wells for any period the Secretary of the Interior may, within 10 days after due notice in writing, either require the drilling and production of such wells to the number necessary, in his opinion, to insure reasonable diligence in the development and operation of the property, or may in lieu of such additional diligent drilling and production require the payment on and after the first anniversary date of this lease of not to exceed \$1 per acre per annum, which sum shall be in addition to any rental or royalty hereinafter specified.

(c) **Rental and royalty.**—To pay, beginning with the date of approval of the lease by the Secretary of the Interior, a rental of \$1.25 per acre per annum in advance during the continuance hereof, the rental so paid for any one year to be credited on the royalty for that year, together with a royalty of 12½ percent of the value or amount of all oil, gas, and/or natural gasoline, and/or all other hydrocarbon substances produced and saved from the land leased herein, save and except oil, and/or gas used by the lessee for development and operation purposes on said lease, which oil or gas shall be royalty free. During the period of supervision, "value" for the purposes hereof may, in the discretion of the Secretary, be calculated on the basis of the highest price paid or offered (whether calculated on the basis of short or actual volume) at the time of production for the major portion of the oil of the same gravity, and gas, and/or natural gasoline, and/or all other hydrocarbon substances produced and sold from the field where the leased lands are situated, and the actual volume of the marketable product less the content of foreign substances as determined by the oil and gas supervisor. The actual amount realized by the lessee from the sale of said products may, in the discretion of the Secretary, be deemed mere evidence of or conclusive evidence of such value. When paid in value, such royalties shall be due and payable monthly on the last day of the calendar month following the calendar month in which produced; when royalty on oil produced is paid in kind, such royalty oil shall be delivered in tanks provided by the lessee on the premises where produced without cost to the lessor unless otherwise agreed to by the parties thereto, at such time as may be required by the lessor: *Provided*, That the lessee shall not be required to hold such royalty oil in storage longer than 30 days after the end of the calendar month in which said oil is produced: *And provided further*, That the lessee shall be in no manner responsible or held liable for loss or destruction of such oil in storage caused by acts of God. All rental and royalty payments, except as provided in sections 8 (c) and 4 (c) shall be made by check or draft drawn on a solvent bank, open for the transaction of business on the day the check or draft is issued, to the order of the superintendent. It is understood that in determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater.

(d) **Monthly statements.**—To furnish to the oil and gas supervisor monthly statements in detail in such form as may be prescribed by the Secretary of the Interior, showing the amount, quality, and value of all oil, gas, natural gasoline, or other hydrocarbon substances produced and saved during the preceding calendar month as a basis upon which to compute, for the superintendent, the royalty due the lessor. The leased premises and all wells, producing operations, improvements, machinery, and fixtures thereon and connected therewith and all books and accounts of the lessee shall be open at all times for the inspection of any duly authorized representative of the Secretary of the Interior.

(e) **Log of well.**—To keep a log in the form prescribed by the Secretary of the Interior of all the wells drilled by the lessee showing the strata and character of the formations passed through by the drill, which log or a copy thereof shall be furnished to the oil and gas supervisor.

(f) **Diligence, prevention of waste.**—To exercise reasonable diligence in drilling and operating wells for oil and gas on the lands covered hereby, while such products can be secured in paying quantities; to carry on all operations hereunder in a good and workmanlike manner in accordance with approved methods and practice, having due regard for the prevention of waste of oil or gas developed on the land, or the entrance of water through wells drilled by the lessee to the productive sands or oil or gas-bearing strata to the destruction or injury of the oil or gas deposits, the preservation and conservation of the property for future productive operations, and to the health and safety of workmen and employees; to plug securely all wells before abandoning the same and to effectually shut off all water from the oil or gas-bearing strata; not to drill any well within 200 feet of any house or barn now on the premises without the lessor's written consent approved by the superintendent; to carry out at the expense of the lessee all reasonable orders and requirements of the oil and gas supervisor relative to prevention of waste, and preservation of the property and the health and safety of workmen; to bury all pipe lines crossing tillable lands below plow depth unless other arrangements therefor are made with the superintendent; to pay the lessor all damages to crops, buildings, and other improvements of the lessor occasioned by the lessee's operations: *Provided*, That the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

(g) **Regulations.**—To abide by and conform to any and all regulations of the Secretary of the Interior now or hereafter in force relative to such leases: *Provided*, That no regulations hereafter approved shall effect a change in rate of royalty or annual rental herein specified without the written consent of the parties to this lease.

(h) **Assignment of lease.**—Not to assign this lease or any interest therein by an operating agreement or otherwise nor to sublet any portion of the leased premises before restrictions are removed, except with the approval of the Secretary of the Interior. If this lease is divided by the assignment of an entire interest in any part of it, each part shall be considered a separate lease under all the terms and conditions of the original lease.

4. The lessor expressly reserves:

(a) **Disposition of surface.**—The right to lease, sell, or otherwise dispose of the surface of the lands embraced within this lease under existing law or laws hereafter enacted, such disposition to be subject at all times to the right of the lessee herein to the use of so much of said surface as is necessary in the extraction and removal of the oil and gas from the land herein described.

(b) **Use of gas.**—The right to use sufficient gas free of charge for all stoves and inside lights in the principal dwelling house on said lands by making connection at his own expense with the well or wells thereon, the use of such gas to be at the lessor's risk at all times.

(c) **Royalty in kind.**—The right to elect on 30 days' written notice to take lessor's royalty in kind.

5. **Surrender and termination.**—The lessee shall have the right at any time during the term hereof to surrender and terminate this lease or any part thereof upon the payment of the sum of one dollar and all rentals, royalties, and other obligations due and payable to the lessor; and in the event restrictions have not been removed, upon a showing satisfactory to the Secretary of the Interior that full provision has been made for conservation and protection of the property and the proper abandonment of all wells drilled on the portion of the lease surrendered, the lease to continue in full force and effect as to the lands not so surrendered. If this lease has been recorded lessee shall file a recorded release with his application to the superintendent for termination of this lease.

6. **Cancellation and forfeiture.**—When, in the opinion of the Secretary of the Interior, there has been a violation of any of the terms and conditions of this lease before restrictions are removed, the Secretary of the Interior shall have the right at any time after 30 days notice to the lessee, specifying the terms and conditions violated, and after a hearing, if the lessee shall so request within 30 days of receipt of notice, to declare this lease null and void, and the lessor shall then be entitled and authorized to take immediate possession of the land: *Provided*, That after restrictions are removed the lessor shall have and be entitled to any available remedy in law or equity for breach of this contract by the lessee.

206-60799

STATE OF MONTANA

County of ROOSEVELT } 68.

On this 29th day of MAY in the year nineteen hundred and FIFTY before
me VERN M. HOWELL a Notary Public for the State of Montana, personally appeared
E. J. DIEHL

known to me (or proved to me on oath of _____)
to be the person whose name IS subscribed to the within instrument and acknowledged to me that he
executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first
above written.

Vern M. Howell
Notary Public for the State of Montana.

Residing at Opheim, Mont.
My Commission expires August 18 1950

Affidavit of Identity



State of Montana }
County of Roosevelt } ss.

E. J. Diehl

Supt. Fort Peck Indian Agency

, being first duly sworn on his oath, states

that he is familiar with the following described property, to-wit:

SE¹₄

of Section 14 Township 28 North Range 51 East and containing 160 acres, more or less

situated in the County of Roosevelt, State of Montana
Mary Foote, Maude F. Buckles, Kate F. Redbear, Mabel F. Bighorn,
Agnes S. Steele, Trivian M. Graves and
and that he is also familiar with Austin S. Buckles, who on

the day of , 19 50, executed a oil lease in favor

of C. H. Murphy Jr., which instrument appears of record in Book , at

page of the records of the county aforesaid; that he knows of his own knowledge that, not-
Mary Foote, Maude F. Buckles, Kate F. Redbear, Mabel F.
Bighorn, Agnes S. Steele, Trivian M. Graves, and
withstanding the discrepancy in name, the said Austin S. Buckles

Mary W. Foote, Maude Buckles, Kate Redbear, Mabel
Foote, Agnes Steele, Trivian Merle Graves,
the said instrument, ^{are} one and the same person as ^s and Austin Scott, the then

heirs to a trust patent issued
record owner of the property by virtue of being the on the 17th day of

December, 19 18, covering the aforesaid property, which deed is of record in Book

206-60799

206-60799

STATE OF MONTANA

County of Roosevelt

SS.

On this 13 day of July in the year nineteen hundred and fifty before me R. E. Lang a Notary Public for the State of Montana, personally appeared Mary Foote, Maude F. Buckles, Kate F. Redbear and Thomas Redbear, Alice Foote, Habel F. Bighorn and Jacob Bighorn, E. J. Diehl, Austin R. Buckles and Audrey M. Buckles

known to me (or proved to me on oath of _____) to be the person whose name are subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

R. E. Lang
Notary Public for the State of Montana.

Residing at Poplar, Montana

My Commission expires April 17 19 50

21

STATE OF ~~MONTANA~~ OregonCounty of Multnomah

SS.

On this 27th day of February in the year nineteen hundred and fifty before me _____ a Notary Public for the State of ~~MONTANA~~ personally appeared Agnes S. and William Steele

known to me (or proved to me on oath of _____) to be the person whose name _____ subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

Barry Wheeler
Notary Public for the State of ~~MONTANA~~ Oregon

Residing at 136 NW 6th Ave Portland

My Commission expires January 31st 19 53

20

7. Removal of buildings, improvements, and equipment.—Lessee shall be the owner of and shall have the right to remove from the leased premises, within 90 days after termination of this lease, any and all buildings, structures, casing, material, and/or equipment placed thereon for the purpose of development and operation hereunder, save and except casing in wells and other material, equipment, and structures necessary for the continued operation of wells producing or capable of being produced in paying quantities as determined by the Secretary of the Interior, on said leased land at the time of surrender of this lease or termination thereof; and except as otherwise provided herein, all casing in wells, material, structures, and equipment shall be and become the property of the lessor.

8. Relinquishment of supervision by the Secretary of the Interior.—Should the Secretary of the Interior, at any time during the life of this instrument, relinquish supervision as to all or part of the acreage covered hereby, such relinquishment shall not bind lessee until said Secretary shall have given 30 days written notice. Until said requirements are fulfilled, lessee shall continue to make all payments due hereunder as provided in section 3 (c). After notice of relinquishment has been received by lessee, as herein provided, this lease shall be subject to the following further conditions:

(a) All rentals and royalties thereafter accruing shall be paid in the following manner: Rentals and royalties shall be paid directly to lessor or his successors in title, or to a trustee appointed under the provisions of section 9 hereof.

(b) If, at the time supervision is relinquished by the Secretary of the Interior, lessee shall have made all payments then due hereunder, and shall have fully performed all obligations on its part to be performed up to the time of such relinquishment, then the bond given to secure the performance hereof, on file in the Indian Office, shall be of no further force or effect.

(c) Should such relinquishment affect only part of the acreage, then lessee may continue to drill and operate the land covered hereby as an entirety: *Provided*, That lessee shall pay in the manner prescribed by section 3 (c), for the benefit of lessor such proportion of all rentals and royalties due hereunder as the acreage retained under the supervision of the Secretary of the Interior bears to the entire acreage of the lease, the remainder of such rentals and royalties to be paid directly to lessor or his successors in title or said trustee as the case may be, as provided in subdivision (a) of this section.

9. Division of fee.—It is covenanted and agreed that should the fee of said land be divided into separate parcels, held by different owners, or should the rental or royalty interests hereunder be so divided in ownership, after the execution of this lease and after the Secretary of the Interior relinquishes supervision hereof, the obligations of lessee hereunder shall not be added to or changed in any manner whatsoever save as specifically provided by the terms of this lease. Notwithstanding such separate ownership, lessee may continue to drill and operate said premises as an entirety: *Provided*, That each separate owner shall receive such proportion of all rentals and royalties accruing after the vesting of his title as the acreage of the fee, or rental or royalty interest, bears to the entire acreage covered by the lease; or to the entire rental and royalty interest as the case may be: *Provided further*, That if, at any time after departmental supervision hereof is relinquished, in whole or in part, there shall be four or more parties entitled to rentals or royalties hereunder, whether said parties are so entitled by virtue of undivided interests or by virtue of ownership of separate parcels of the land covered hereby, lessee, at his election may withhold the payment of further rentals or royalties (except as to the portion due the Indian lessor while under restriction), until all of said parties shall agree upon and designate in writing and in a recordable instrument a trustee to receive all payments due hereunder on behalf of said parties and their respective successors in title. Payments to said trustee shall constitute lawful payments hereunder, and the sole risk of an improper or unlawful distribution of said funds by said trustee shall rest upon the parties naming said trustee and their respective successors in title.

10. Drilling and producing restrictions.—It is covenanted and agreed that the Secretary of the Interior may impose restrictions as to time or times for the drilling of wells and as to the production from any well or wells drilled when in his judgment such action may be necessary or proper for the protection of the natural resources of the leased land and the interests of the Indian lessor, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, or regulations by competent Federal or State authorities or lawful agreements among operators regulating either drilling or production, or both.

11. Unit operation.—The parties hereto agree to subscribe to and abide by any agreement for the cooperative or unit development of the field or area, affecting the leased lands, or any pool thereof, if and when collectively adopted by a majority operating interest therein and approved by the Secretary of the Interior, during the period of supervision.

12. Helium—public emergency.—It is covenanted and agreed that helium gas, carbon dioxide gas, and all other natural gases are included under the term "gas" as used in this lease, and in the event gas is discovered containing helium the United States Government shall have the right to purchase, at reasonable prices, all or any part of the production and to regulate the amount and manner of production; and in time of war or other public emergency, the United States Government shall have the option to purchase all or any part of the products produced under this lease.

13. Conservation.—The lessee in consideration of the rights herein granted agrees to abide by the provisions of any act of Congress, or any order or regulation prescribed pursuant thereto, relating to the conservation, production, or marketing of oil, gas, or other hydrocarbon substances.

14. Heirs and successors in interest.—It is further covenanted and agreed that each obligation hereunder shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors of, or assigns of the respective parties hereto.

IN WITNESS WHEREOF, the said parties have hereunto subscribed their names and affixed their seals on the day and year first above mentioned.

Two witnesses to execution by lessor:

.....[SEAL]

P. O.

.....[SEAL]

P. O.

Two witnesses to execution by lessee:

P. O.

P. O.

STATE OF

COUNTY OF

Attest:

Before me, a notary public, on this 31 day of March, 1937, personally appeared

C. H. Murphy, Jr.

to me known to be the identical person who executed the within and foregoing lease, and acknowledged to me that

executed the same as free and voluntary act and deed for the uses and purposes therein set forth.

MY COMMISSION EXPIRES MAY 1, 1953

My commission expires

Notary Public for State of Ark.

Residing at El Dorado Ark.

UNITED STATES
DEPARTMENT OF THE INTERIOR

Washington, D. C., NOV 20 1937, 19

The within lease is hereby approved.

SAC. H. M. Grichfield

Acting Commissioner of Indian Affairs.

Filed for record this day of , 19, at o'clock in.

By

Rental received, \$

WITNESS

Yellow Robin Kingfisher, deceased, Fort Peck allottee No. 481
Probate No's. 29027-20; 225-39; 8215-47

I, Mary M. Foote, Fort Peck allottee No. 339, heir and dower, waive
all dower rights in that portion of the Oil and Gas rights inherited
by Claude F. Buckles; Kate F. Redear; Alice Foote; Mabel F. Sighorn;
Agnes M. Steele; Austin M. Buckles; and Trivian Lerle Graves, a minor,
in the SE/4 Sec. 14 T-28N., R-51E.M.E., containing 160 acres, more or
less, retaining to myself only my inherited 1/3 interest in said Oil
and Gas rights.

David Buckles
Witness

Mary M. Foote
Heir
Mark

Austin Buckles
Witness

Subscribed and sworn before me this 8th day of November, 1950

Oliver M. Lien
Notary Public for the State of Montana.
Residing at Brookton, Montana. My
Commission expires June 14, 1952.

APPROVED:

John M. Johnson
John M. Johnson
Acting Superintendent

Fort Peck Agency
Poplar, Montana

November 6, 1950

This is to certify that Mary W. Foote, original
allottee No. 339, and Mary Foote, allottee No. 339, are one and
the same person.

John W. Johnson,
Acting Superintendent

Fort Peck Agency
Poplar, Montana

November 6, 1950

This is to certify that Maude Buckles, original
allottee No. 129, and Maude F. Buckles, allottee No. 129, are
one and the same person.

John W. Johnson,
Acting Superintendent

Port Peck Agency
Poplar, Montana

November 6, 1950

This is to certify that Kate Redbear, original
allottee No. 340, and Kate Redbear, allottee No. 340, are
one and the same person.

John W. Johnson,
Acting Superintendent

Fort Tock Agency
Dupar, Montana

November 6, 1950

This is to certify that Label Foote, original
allottee No. 2448, and Mabel F. Bighorn, allottee No. 2448,
are one and the same person.

John F. Johnson,
Acting Superintendent

Fort Peck Agency
Poplar, Montana

November 6, 1950

This is to certify that Agnes Steele, original
allottee No. 2015, and Agnes S. Steele, allottee No. 2015,
are one and the same person.

John W. Johnson,
Acting Superintendent

Fort Peck Agency
Poplar, Montana

November 6, 1950

This is to certify that Austin Scott, original
allottee No. 2293, and Austin S. Buckles, allottee No. 2293,
are one and the same person.

John M. Johnson,
Acting Superintendent

206-60799

Doc. No. 15490

OIL AND GAS MINING LEASE

Mary Foot, et al

to

C. H. Murphy Co.

STATE OF MONTANA,

County of Roosevelt,

ss.

Filed for Record this 22nd

day of December, A. D.

1950 at 9:00 o'clock A. M.

and duly recorded in volume 114

on pages 107-116 Inc. Records of
Roosevelt County, Montana

Clarence A. Schmitt
County Recorder

Fee \$11.05 pd.

Deputy

Return to

Murphy Corporation

502 U. S. National Bank Bldg.

Denver, Colorado

32

662067-60799

ASSIGNED EFFECTIVE 12/31/52 FROM C.H. MURPHY, Jr. ALL TO: MURPHY CORPORATION 15/32
PLACID OIL CO. 16/32
Wm. & THEODOSA NOLAN 1/32

ASSIGNED EFFECTIVE 9/29/54 FROM MURPHY TO: MARINE OIL 1/4 OF 15/32 OR 15/128
OWNERS: MURPHY 45/128, PLACID OIL CO. 64/128, NOLANS 4/128, & MARINE OIL 15/128

ASSIGNED EFFECTIVE 4/1/55 FROM MARINE OIL TO Wm. J. SHERRY 1/4 OF 15/128 OR 15/512
OWNERS: MURPHY 180/512, PLACID OIL CO. 256/512, NOLANS 16/512, MARINE OIL 45/512,
& Wm. J. SHERRY 15/512

ASSIGNED EFFECTIVE 4/4/55 FROM Wm. J. SHERRY TO: MURPHY 1/4 OF 15/512 OR 15/2048
OWNERS: MURPHY 735/2048, PLACID OIL CO. 1024/2048, NOLANS 64/2048, MARINE OIL 180/2048,
& Wm. J. SHERRY 45/2048

ASSIGNED EFFECTIVE 4/2/82 FROM PLACID OIL CO. TO: PARTNERSHIP PROPERTIES COMPANY- ALL
OWNERS: MURPHY 735/2048, NOLANS 64/2048, MARINE OIL 180/2048, Wm. J. SHERRY 45/2048,
& PARTNERSHIP PROPERTIES COMPANY 1024/2048

ASSIGNED EFFECTIVE 12/16/86 FROM PARTNERSHIP PROPERTIES COMPANY TO: FAIRWAY RESOURCES, INC.
(896/2048), & TPEX EXPLORATION, INC. (128/2048)
OWNERS: MURPHY 735/2048, NOLANS 64/2048, MARINE OIL 180/2048, Wm. J. SHERRY 45/2048,
FAIRWAY RESOURCES, INC. 896/2048, & TPEX EXPLORATION, INC. 128/2048

ASSIGNED EFFECTIVE 12/16/86 FROM FAIRWAY RESOURCES, INC. (896/2048) TO: WELLSTAR CORPORATION
(896/2048)

ASSIGNED EFFECTIVE 3/19/87 FROM: TPEX EXPLORATION, INC. (128/2048) TO: MURPHY OIL USA, INC.

ASSIGNED EFFECTIVE 3/19/87 FROM: WELLSTAR CORPORATION (896/2048) TO: MURPHY OIL USA, INC.

5-154a
(August 1961)

RECEIVED
BUREAU OF INDIAN AFFAIRS
DEPT. OF THE INTERIOR
SEP 16 1 56 PM '88
BUREAU OF REALTY
TITLES & RECORDS
SECTION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

LEASE NO. _____

CONTRACT No. I-3712879

206 60799

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved
Oil and Gas _____ mining lease, dated _____ November 30, _____, 19 50,
entered into by and between Mary Foote et al _____, lessor,
and C. H. Murphy, Jr. _____, lessee,
covering the following-described lands in the Fort Peck Reservation
(Insert name of Reservation, Pueblo, Nation, etc., as needed)
in the State of Montana _____
Township 28 North, Range 51 East _____
Section 14: SE $\frac{1}{4}$ _____

Now, THEREFORE, for and in consideration of Ten dollars and other valuable
consideration _____ dollars (\$ 10.00 _____), the receipt of which is hereby acknowl-
edged, the said Wellstar Corporation _____
the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys _____
all of its _____ right, title, and interest in and to said lease,

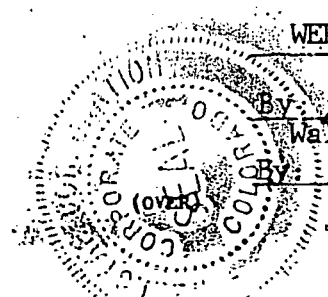
subject to the approval of the Secretary of the Interior or his authorized representative to _____
Murphy Oil USA, Inc. _____, of 200 Peach Street,
El Dorado, AR 71730
Said assignment to be effective from date of approval hereby by the Secretary
of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set his _____ hand and seal, this 19th
day of _____, 1987

WELLSTAR CORPORATION

By: Walter Mayer
Walter Mayer, President

By: Dorothy Mayer
Secretary



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

LEASE No. 3578

CONTRACT No. I-3712879

206 60799

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved
Oil and Gas mining lease, dated November 30, 1950,
entered into by and between Mary Foote et al, lessor,
and C. H. Murphy, Jr., lessee,
covering the following-described lands in the Fort Peck Reservation
(Insert name of Reservation, Pueblo, Nation, etc., as needed)
in the State of Montana

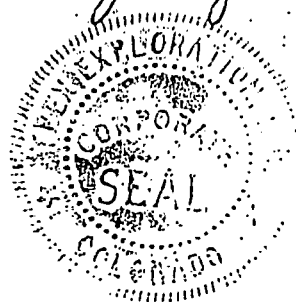
Township 28 North, Range 51 East

Section 14: SE $\frac{1}{4}$

NOW, THEREFORE, for and in consideration of Ten dollars and other valuable
consideration dollars (\$10.00), the receipt of which is hereby acknowl-
edged, the said TPEX Exploration, Inc.
the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys
all of its right, title, and interest in and to said lease,

subject to the approval of the Secretary of the Interior or his authorized representative to
Murphy Oil USA, Inc., of 200 Peach Street,
El Dorado, AR 71730
Said assignment to be effective from date of approval hereby by the Secretary
of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set his hand and seal, this 23rd
day of January, 1987



TPEX Exploration, Inc.

By: *Hunter S. Swanson*

Hunter S. Swanson, President

(OVER)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved

OIL AND GAS mining lease, dated February 27, 1950,
 entered into by and between Mary Foote; Maude F. Buckles; Kate F. Redbear and Thomas Redbear
 S. Steele and William Steele; Trivian M. Graves; Austin S. Buckles and Audrey M. Buckl
 and C. H. MURPHY, JR., lessor, lessee,

covering the following-described lands in the FORT PECK INDIAN RESERVATION
 (Insert name of Reservation, Pueblo, Nation, etc., as needed)
 in the State of MONTANA, COUNTY OF ROOSEVELT

Township 28 North, Range 51 East M.P.M.

Section 14: SE/4

Now, THEREFORE, for and in consideration of Ten and more

dollars (\$10.00), the receipt of which is hereby acknowl-
 edged, the said FAIRWAY RESOURCES, INC.

the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys

ALL OF ITS right, title, and interest in and to said lease,

subject to the approval of the Secretary of the Interior or his authorized representative to

WELLSTAR CORPORATION, of 9704 State Highway 66,

Platteville, CO 80651 Said assignment to be effective from date of approval hereby by the Secretary
 of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set his hand and seal, this 16th

day of SEPTEMBER, 1986

ATTEST

David Roitman
 David Roitman, Secretary

FAIRWAY RESOURCES, INC.

By: *Steven A. Roitman*

Steven A. Roitman, President

5-8429
(August 1961)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

LEASE No. 17777(92)

CONTRACT No. I-37-Ind-12879

206-60799

#31

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved

Oil and Gas mining lease, dated February 27, 1950,
Mary Foote; Maude F. Buckles; Kate F. Redbear and Thomas Redbear;
entered into by and between Alice Foote; Mabel F. Bighorn and Jacob Bighorn; Agnes S. Steele and William Steele; Trivian M. Graves; Austin S. Buckles and Audrey M. Buckles,
and C. H. Murphv, Jr., lessee,

covering the following-described lands in the Fort Peck Indian Reservation
(Insert name of Reservation, Pueblo, Nation, etc., as needed)
in the State of Montana, County of Roosevelt

Township 28 North, Range 51 East M.P.M.

Section 14: SE/4

Now, THEREFORE, for and in consideration of Ten and more

_____ dollars (\$ 10.00), the receipt of which is hereby acknowi-
edged, the said Partnership Properties Co.

the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys _____
all of its _____ right, title, and interest in and to said lease,

subject to the approval of the Secretary of the Interior or his authorized representative to Fairway
Resources, Inc. - 87.5%, TPEX Exploration, Inc. - 12.5%, of 1536 Cole Boulevard, Ste. 201
Golden, Colorado 80401 Said assignment to be effective from date of approval hereby by the Secretary
of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set his hand and seal, this 15th
day of January, 19 85

PARTNERSHIP PROPERTIES, CO.

By: Charles E. Holmes

Charles E. Holmes

Attorney-in-fact

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

LEASE No. 17777(92)
CONTRACT No. I-37-Ind-12879

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved
oil and gas mining lease, dated February 27, 1950,
Mary Foote; Maude F. Buckles; Kate F. Redbear and Thomas Redbear;
entered into by and between Alice Foote; Mabel E. Bighorn and Jacob Bighorn; Agnes lessor,
S. Steele and William Steele; Trivian M. Graves; Austin S. Buckles and Audrey M. Buckles,
and C. H. Murphy, Jr., lessee,

covering the following-described lands in the Fort Peck Indian Reservation
(Insert name of Reservation, Pueblo, Nation, etc., as needed)
in the State of Montana, County of Roosevelt:
Township 28 North, Range 51 M.P.M.
Section 14: SE/4

Now, THEREFORE, for and in consideration of
Ten and more dollars (\$ 10.00), the receipt of which is hereby acknowl-
edged, the said Placid Oil Company
the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys
all of their (50%) right, title, and interest in and to said lease,

subject to the approval of the Secretary of the Interior or his authorized representative to
Partnership Properties Co. of 717 Seventeenth St.,
Denver, Colorado Said assignment to be effective from date of approval hereby by the Secretary
of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set its hand and seal, this 20th
day of January, 1982

PLACID OIL COMPANY
PAUL W. HICKS, SECRETARY

PLACID OIL COMPANY

C. D. BROWN, PRESIDENT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

2051 60793
LEASE No. 17777(92)
CONTRACT No. I-37-Ind-12879

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior or his authorized representative has heretofore approved oil and gas _____ mining lease, dated February 27, 19⁵⁰,
Mary Foote; Maude F. Buckles; Kate F. Redbear and Thomas Redbear;
entered into by and between Alice Foote; Mabel F. Bighorn and Jacob Bighorn; Agnes lessor,
S. Steele and William Steele; Trivian M. Graves; Austin S. Buckles and Audrey M. Buckles,
and C. H. Murphy, Jr. _____, lessee,

covering the following-described lands in the _____ Fort Peck Indian Reservation _____
(Insert name of Reservation, Pueblo, Nation, etc., as needed)
in the State of _____ Montana, County of Roosevelt:

Township 28 North, Range 51 M.P.M.

Section 14: SE/4

NOW, THEREFORE, for and in consideration of _____
Ten and more _____ dollars (\$ 10.00), the receipt of which is hereby acknowl-
edged, the said _____ Placid Oil Company
the owner of the above-described lease, hereby bargains, sells, transfers, assigns, and conveys _____
all of their (50%) _____ right, title, and interest in and to said lease,

subject to the approval of the Secretary of the Interior or his authorized representative to _____
Partnership Properties Co. _____, of 717 Seventeenth St.,
Denver, Colorado _____ Said assignment to be effective from date of approval hereby by the Secretary
of the Interior or his authorized representative.

IN WITNESS WHEREOF, the said assignor has hereunto set its hand and seal, this 20th
day of January, 19 82

ATTEST:

Paul W. Hicks

PAUL W. HICKS, SECRETARY

PLACID OIL COMPANY

C. D. Brown

C. D. BROWN, PRESIDENT

UNITED STATES

Contract No. I-37-Ind-12879

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Lease No. 3578

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior has heretofore approved a certain oil and gas mining lease dated February 27, 1950, entered into by and between Mary Foote et al

Mary Foote et al, Lessors,
and C. H. MURPHY, JR., Lessee, covering the following described lands in the Fort Peck Indian Reservation in the State of Montana, County of Roosevelt:

Township 28 North, Range 51 East M.P.M.

Sec. 14, SE/4

WHEREAS, the above described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951; and

WHEREAS, by mesne assignments heretofore consummated, WILLIAM J. SHERRY of Tulsa, Oklahoma, is the present owner of an undivided interest in and to the above described lease.

NOW, THEREFORE, for and in consideration of TEN AND MORE dollars (\$10.00), the receipt of which is hereby acknowledged, the said WILLIAM J. SHERRY does hereby bargain, sell, transfer, assign and convey unto MURPHY CORPORATION, a Louisiana Corporation, of El Dorado, Arkansas, an undivided one-fourth (1/4) right, title and interest in and to the lease hereinabove described, said assignment to be effective from date of approval hereof by the Secretary of the Interior.

IN WITNESS WHEREOF, the said assignor has hereunto set his hand and seal, this 5th day of November 1954.

William J. Sherry (L. S.)
WILLIAM J. SHERRY

(OVER)

WITNESSED BY
SPECIAL AGENT

NOTARIZED COPY OF RECORD

UNITED STATES

Contract No. I-37-Ind-12879

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Lease No. 3578

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior has heretofore approved a certain oil and gas mining lease dated February 27, 1950, entered into by and between Mary Foote et al

_____, Lessors,
and C. H. MURPHY, JR., Lessee, covering the following described lands in the Fort Peck Indian Reservation in the State of Montana, County of Roosevelt:

Township 28 North, Range 51 East, M.P.M.

Sec. 14, SE 1/4

MARTIN T. SHERMAN

of _____ 1924

IN WITNESS WHEREOF, the said assignor has hereunto set its hand and seal this _____ day of _____ 1951.

Witness my hand and seal this _____ day of _____ 1951.

Secretary of the Interior, Department of the Interior, Washington, D.C. 20540, hereby certifies that the above described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951; and

WHEREAS, the above described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951; and

WHEREAS, by mesne assignments heretofore approved by the Secretary of the Interior, MARINE OIL COMPANY, an Arkansas Corporation, of El Dorado, Arkansas, is the present owner of an undivided interest in and to the above described lease.

NOW, THEREFORE, for and in consideration of ONE AND MORE dollars (\$1.00), the receipt of which is hereby acknowledged, the said MARINE OIL COMPANY hereby transfers, assigns, and conveys an undivided one-fourth (1/4) right, title and interest in and to said lease to WILLIAM J. SHERMAN of Tulsa, Oklahoma, said assignment to be effective from date of approval hereof by the Secretary of the Interior.

IN WITNESS WHEREOF, the said assignor has hereunto set its hand and seal, this _____ day of _____ 1951.

_____, Secretary of the Interior, Department of the Interior, Washington, D.C. 20540, hereby certifies that the above described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951; and

_____, MARINE OIL COMPANY

Attest: _____ By: _____

Assistant Secretary Vice President

(OVER)

ACKNOWLEDGMENT OF CONVEYANCE

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

206-790799

Contract No. I-37-ind-12879
Our Lease No. 3578

ASSIGNMENT OF MINING LEASE

WHEREAS, the Secretary of the Interior has heretofore approved a certain oil and gas mining lease dated

February 27, 1950

entered into by and between

Mary Foote (Single)(339); Maude F. Buckles (Single)(129); Kate F. Redbear and Thomas Redbear (3589) (340) wife and husband; Alice Foote (Single)(2001); Mabel F. Bighorn and Jacob Bighorn (2448)(1762) wife and husband; Agnes S. Steele and William Steele (2015) wife and husband; Trivian M. Graves-minor (G-215); Austin S. Buckles and Audrey M. Buckles (2293) husband and wife

Township 28 North, Range 51 East M.P.M.
Sec. 14: SE/4

WHEREAS, the above-described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951;

AND WHEREAS, the Secretary of the Interior has heretofore approved an assignment of an undivided interest in the above-described lease from the said C. H. MURPHY, JR., to MURPHY CORPORATION, a Louisiana Corporation of El Dorado, Arkansas;

NOW, THEREFORE, for and in consideration of TEN AND MORE dollars (\$10.00), the receipt of which is hereby acknowledged, the said MURPHY CORPORATION hereby bargains, sells, transfers, assigns, and conveys, an undivided one-fourth (1/4) right, title and interest in and to said lease to MARINE OIL COMPANY, an Arkansas Corporation, of El Dorado, Arkansas. Said assignment to be effective from date of approval hereof by the Secretary of the Interior.

IN WITNESS WHEREOF, the said assignor has hereunto set its hand and seal, this 16th day of

July, 1954.

Attest:

Assistant Secretary

Obadd L. Durrett

MURPHY CORPORATION

By

Exploration Manager

(OVER)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Contract No.

1-37-12879

Our Lease No. 3578

ASSIGNMENT OF MINING LEASE

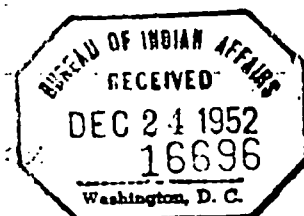
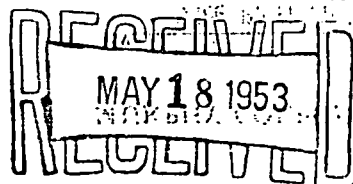
WHEREAS, the Secretary of the Interior has heretofore approved a certain oil and gas mining lease dated

February 27, 1950, entered into by and between Mary Foote; Maude F. Buckles; Kate F. Redbear and Thomas Redbear; Alice Foote; Nabel F. Bighorn and Jacob Bighorn; Agnes S. Steele and William Steele; Trivian M. Graves; Austin S. Buckles and Audrey M. Buckles

and C. H. MURPHY, JR. lessee, covering the following described lands in the Fort Peck Indian Reservation in the State of Montana, County of Roosevelt:

Township 28 North, Range 51 East N.P.M.
Sec. 14: 52 1/2

FORT PECK INDIAN AGENCY



AND WHEREAS, the above-described lease is subject to a certain Unit Agreement designated I-Sec. No. 869, approved by the Assistant Commissioner of Indian Affairs on August 22, 1951, and approved by the Acting Director of the United States Geological Survey on August 23, 1951;

NOW, THEREFORE, for and in consideration of TEN AND MORE dollars (\$10.00), the receipt of which is hereby acknowledged, the said C. H. MURPHY, JR., the owner of the above-described lease, hereby bargains, sells, transfers, assigns and conveys all of his right, title and interest in and to said lease, subject to the approval of the Secretary of the Interior, to MURPHY CORPORATION, a Louisiana Corporation of El Dorado, Arkansas, an undivided fifteen thirty-seconds (15/32) interest; to PLACID OIL COMPANY, a Delaware Corporation of Shreveport, Louisiana, an undivided one-half (1/2) interest; and to WILLIAM C. NOLAN AND THEODOSIA M. NOLAN of El Dorado, Arkansas, an undivided one thirty-second (1/32) interest; said assignment to be effective from date of approval hereof by the Secretary of the Interior.

IN WITNESS WHEREOF, the said assignor has hereunto set his hand and seal, this 21st day of

July, 19 52

C. H. MURPHY, JR.

Form 5-184a
(May 1949)

Yellow Woman Kingfisher, Mont.

Contract No. I-37ind-

2379

60739

F. P. No. 481

Prob. 29027-20

DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

This lease to be issued
in lieu of lease No.
3578 dated February 27,
1950

OIL AND GAS MINING LEASE—ALLOTTED INDIAN LANDS

Assiniboine-Sioux TRIBE, STATE OF Montana

MAR 22 1951

THIS INDENTURE OF LEASE, made and entered into in quintuplicate this

19 day of
Mary W. Foote (39) (an unmarried woman, of Brockton, Montana); Maude Buckles (129) (an unmarried woman, of Poplar, Montana); Kate Redbear and Thomas Redbear (3589) (wife and husband, of Brockton, Montana); Alice Foote (2001) (an unmarried woman, of Brockton, Montana); Mabel Foote Bighorn and Jacob Bighorn (2418) (wife and husband, of Brockton, Montana); Agnes Steele and William Steele (2015) (wife and husband, of 3503 NW Quam St., Portland, Oregon); Trivian Merle Graves (0-215) (a minor, of Poplar, Montana); Austin Scott Buckles and Audrey M. Buck (2293) (husband and wife, of Poplar, Montana)

State of Montana, allottee No. 481

(roll No.), of the Sioux Tribe of Indians, designated herein as

lessor, and C. H. Murphy, Jr.

State of Montana, allottee No. 481

State of Montana, allottee No. 481

State of Montana, allottee No. 481

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State of Montana, allottee No. 481

State of Montana, allottee No. 481

State of Montana, allottee No. 481

State of Montana, allottee No. 481

7. Removal of buildings, improvements, and equipment.—Lessee shall be the owner of and shall have the right to remove from the leased premises, within 90 days after termination of this lease, any and all buildings, structures, casing, material, and/or equipment placed thereon for the purpose of development and operation hereunder, save and except casing in wells and other material, equipment, and structures necessary for the continued operation of wells producing or capable of being produced in paying quantities as determined by the Secretary of the Interior, on said leased land at the time of surrender of this lease or termination thereof; and except as otherwise provided herein, all casing in wells, material, structures, and equipment shall be and become the property of the lessor.

8. Relinquishment of supervision by the Secretary of the Interior.—Should the Secretary of the Interior, at any time during the life of this instrument, relinquish supervision as to all or part of the acreage covered hereby, such relinquishment shall not bind lessee until said Secretary shall have given 30 days written notice. Until said requirements are fulfilled, lessee shall continue to make all payments due hereunder as provided in section 3 (c). After notice of relinquishment has been received by lessee, as herein provided, this lease shall be subject to the following further conditions:

(a) All rentals and royalties thereafter accruing shall be paid in the following manner: Rentals and royalties shall be paid directly to lessor or his successors in title, or to a trustee appointed under the provisions of section 9 hereof.

(b) If, at the time supervision is relinquished by the Secretary of the Interior, lessee shall have made all payments then due hereunder, and shall have fully performed all obligations on its part to be performed up to the time of such relinquishment, then the bond given to secure the performance hereof, on file in the Indian Office, shall be of no further force or effect.

(c) Should such relinquishment affect only part of the acreage, then lessee may continue to drill and operate the land covered hereby as an entirety: *Provided*, That lessee shall pay in the manner prescribed by section 3 (c), for the benefit of lessor such proportion of all rentals and royalties due hereunder as the acreage retained under the supervision of the Secretary of the Interior bears to the entire acreage of the lease, the remainder of such rentals and royalties to be paid directly to lessor or his successors in title or said trustee as the case may be, as provided in subdivision (a) of this section.

9. Division of fee.—It is covenanted and agreed that should the fee of said land now or hereafter be divided into separate parcels, held by different owners, or should the rental or royalty interests hereunder be so divided in ownership, the obligations of lessee hereunder shall not be added to or changed in any manner whatsoever save as specifically provided by the terms of this lease. Notwithstanding such separate ownership, lessee may continue to drill and operate said premises as an entirety: *Provided*, That each separate owner shall receive such proportion of all rentals and royalties accruing after the vesting of his title as the acreage of the fee, or rental or royalty interest, bears to, the entire acreage covered by the lease; or to the entire rental and royalty interest as the case may be: *Provided further*, That if, at any time after departmental supervision hereof is relinquished, in whole or in part, there shall be four or more parties entitled to rentals or royalties hereunder, whether said parties are so entitled by virtue of undivided interests or by virtue of ownership of separate parcels of the land covered hereby, lessee, at his election may withhold the payment of further rentals or royalties (except as to the portion due the Indian lessor while under restriction), until all of said parties shall agree upon and designate in writing and in a recordable instrument a trustee to receive all payments due hereunder on behalf of said parties and their respective successors in title. Payments to said trustee shall constitute lawful payments hereunder, and the sole risk of an improper or unlawful distribution of said funds by said trustee shall rest upon the parties naming said trustee and their respective successors in title.

10. Drilling and producing restrictions.—It is covenanted and agreed that the Secretary of the Interior may impose restrictions as to time or times for the drilling of wells and as to the production from any well or wells drilled when in his judgment such action may be necessary or proper for the protection of the natural resources of the leased land and the interests of the Indian lessor, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, or regulations by competent Federal or State authorities or lawful agreements among operators regulating either drilling or production, or both.

11. Unit operation.—The parties hereto agree to subscribe to and abide by any agreement for the cooperative or unit development of the field or area, affecting the leased lands, or any pool thereof, if and when collectively adopted by a majority operating interest therein and approved by the Secretary of the Interior, during the period of supervision.

12. Helium—public emergency.—It is covenanted and agreed that helium gas, carbon dioxide gas, and all other natural gases are included under the term "gas" as used in this lease, and in the event gas is discovered containing helium the United States Government shall have the right to purchase, at reasonable prices, all or any part of the production and to regulate the amount and manner of production; and in time of war or other public emergency, the United States Government shall have the option to purchase all or any part of the products produced under this lease.

13. Conservation.—The lessee in consideration of the rights herein granted agrees to abide by the provisions of any act of Congress, or any order or regulation prescribed pursuant thereto, relating to the conservation, production, or marketing of oil, gas, or other hydrocarbon substances.

14. Heirs and successors in interest.—It is further covenanted and agreed that each obligation hereunder shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors of, or assigns of the respective parties hereto.

IN WITNESS WHEREOF, the said parties have hereunto subscribed their names and affixed their seals on the day and year first above mentioned.

Two witnesses to execution by lessor:

.....[SEAL]

P. O.

.....[SEAL]

P. O.

Two witnesses to
execution by lessors:

X Mrs. Isabel Youpee
P.O. 6606 E 9th Way, Vanc, Wn.
X William Youpee
P.O. 6606 E. 9th Way, Vanc, Wn.

Mrs. Isabel Youpee and William Youpee
witnessed the signatures of Agnes Steele
and William Steele



Vernon J. Poreau
P.O. Poplew, Montana
David Buckles
P.O. Poplew, Montana

Vernon J. Poreau and David Buckles
witnessed the signatures of all the
heirs except Agnes Steele and William
Steele.

Mary W. Foote

Maudie Buckles
Maudie Buckles

Kate Redbear
Kate Redbear

Thomas Redbear
Thomas Redbear

Alice Foote
Alice Foote

Mabel Foote Bighorn
Mabel Foote Bighorn

Jacob Bighorn
Jacob Bighorn

X Agnes Steele
Agnes Steele

X William Steele
William Steele

John W. Johnson
John W. Johnson, Acting
Superintendent, Fort Peck Indian
Agency, for and in behalf of
Trivian Marie Graves, a minor

Austin Scott Buckles
Austin Scott Buckles

Audrey M. Buckles
Audrey M. Buckles

STATE OF MONTANA }
 County of ROOSEVELT } ss.

On this _____ day of _____ in the year nineteen hundred and fifty-one before me _____ a Notary Public for the State of Montana personally appeared Mary W. Foote; Maude Buckles; Kate Redbear and Thomas Redbear; Alice Foote; Mabel Foote Bighorn and Jacob Bighorn; John W. Johnson; Austin Scott Buckles and Audrey M. Buckles

known to me (or proved to me on oath of _____)
 to be the person s whose name s are subscribed to the within instrument and acknowledged to me that t he y executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

[Signature]
 Notary Public for the State of Montana
 Residing at Poplar, Montana
 My Commission expires 16 June 1953

Oregon
 STATE OF MONTANA

County of MULTNOMAH } ss.

On this 24TH day of February in the year nineteen hundred and 1951 before me S. L. Greenberg a Notary Public for the State of Oregon personally appeared Agnes Steele and William Steele

known to me (or proved to me on oath of _____)
 to be the person s whose name s are subscribed to the within instrument and acknowledged to me that t he y executed the same.

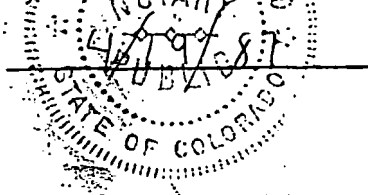
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

[Signature]
 Notary Public for the State of Oregon
 Residing at Poplar, Oregon
 My Commission expires 16 June 1953

STATE OF COLORADO)
) ss
COUNTY OF DENVER)

On this 16th day of January in the year 19 85,
before me Mary J. Pritchard, a Notary Public for the
State of Colorado, personally appeared Charles E. Holmes
known to me to be the person whose name is subscribed
to the within instrument as the Attorney in Fact of Partnership Properties Co.
and acknowledged to me that he subscribed the name of Partnership Properties Co.
thereto as principal, and his own name as Attorney in Fact.

My Commission expires:



Mary J. Pritchard
Notary Public
State of Colorado
Residing at 717-171-Street
Denver, CO 80202

AUTHORITY FOR EXPENDITURE
 MURPHY CORPORATION - EAST POPLAR UNIT NO. 104
 1980' FROM EAST LINE AND 1320' FROM SOUTH LINE
 OF SECTION 14-T28N-R51E, ROOSEVELT COUNTY, MONTANA

WELL DRILLING & CONSTRUCTION EXPENSE:	TO CSG. PT.	COMP. & EQUIP.	TOTAL COST
Drilling - Footage - 5905' @ \$5.25/ft.	\$ 31,000		\$ 31,000
Daywork - 2 days @ \$350/day &	1,700		1,700
4 days @ \$775/day		\$ 3,100	3,100
Loc. survey, permit & prep.	500		500
Roads, fences, cattleguard, etc.	500		500
Mud mat. & chem., incl. oil & gas	3,500		3,500
Drilling bits, baskets, etc.		250	250
Cementing casing	1,550	1,150	2,700
Coring materials & services	200		200
Testing services, incl. swabbing	800		800
Other logs, surveys, & analysis	1,600	800	2,400
Hydrafrac, acidize, etc., incl. oil		1,400	1,400
Float equip., centralizers, etc.	300	600	900
Trucking, welding & other labor	250	500	750
Supervision & miscellaneous	250	500	750
Total Est. Well Drill. & Const. Exp.	\$ 42,150	\$ 8,300	\$ 50,450
WELL EQUIPMENT COSTS:			
Casing: 1000' of 9-5/8" O.D.	\$ 4,000		\$ 4,000
Casing: 5905' of 5-1/2" O.D.		\$ 11,450	11,450
Tubing: 5905' of 2-7/8" O.D.		5,525	5,525
Casing head & connections	300		300
Xmas tree & connections		800	800
Total Est. Well Equip. Costs	\$ 4,300	\$ 17,775	\$ 22,075
Total Est. Cost of Well	\$ 46,450	\$ 26,075	\$ 72,525
LEASE EQUIPMENT:			
Flow lines		\$ 2,000	\$ 2,000
Other line pipe, valves, & fittings		500	500
Trucking, welding, & other labor		500	500
Total Est. Cost of Lease Equip.		\$ 3,000	\$ 3,000
TOTAL EST. COST OF WELL & LEASE EQUIP.	\$ 46,450	\$ 29,075	\$ 75,525

APPORTIONMENT OF TOTAL ESTIMATED COSTS

Murphy Corporation	31.448470%	\$ 14,608	\$ 9,144	\$ 23,751
Munoco Company	2.096565%	974	610	1,583
Placid Oil Company	33.545035%	15,582	9,753	25,335
The Carter Oil Company	16.335860%	7,588	4,750	12,338
Phillips Petroleum Co.	16.335860%	7,588	4,750	12,338
C. F. Lundgren	.238210%	111	69	180

APPROVAL OF EXPENDITURE

Requested by:

Harold Miller APR 11 1958
 Division Production Supt. Date

Recommend Approval:

Donald Kirby APR 11 1958
 Division Manager Date

Recommend Approval:

W. L. L. Duncan 4-23-58
 Staff Production Man Date

Recommend Approval:

W. L. L. Rodin 4-22-58
 Budget Supervisor Date

Approved:

W. L. L. C. McDonald 4-23-58
 Vice President-Operations Date

mail to M.T. (2) m.c.

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 104
1/4 SW SE Section 14, T20N, R51E, Roosevelt County, Montana
(Replace Flowline)

PRESENT STATUS: Well flowing 243 BFPD 56 BOPD 187 BOPD @ 77% ES&W January, 1969 Well Test. Flowline is in extremely bad condition due to internal corrosion.

PROPOSED: Replaced the existing 3" steel flowline with a 2" fiberglass flowline.

JUSTIFICATION: During the past 14 months we have had 17 leaks in the flowline for a total repair cost of \$1,835.00. This figure included replacing 900' of flowline but does not include lost production or surface damages.

ESTIMATED COST

2500' of fiberglass pipe with couplings	<u>RTP-70</u> ^{Redi} thd <u>Mid-Continental</u>	\$ 1,950.00
Ditch 2500' @ \$0.30 per foot		\$ 750.00
Lay and backfill @ \$0.15 per foot		\$ 375.00
Misc. labor, material and trucking		\$ 175.00
Total Estimated Cost		\$ 3,250.00

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.468470%	\$ 1,022.00
Muneco Company	2.096565%	\$ 68.00
Placid Oil Company	33.545035%	\$ 1,090.00
Humble Oil & Refining Company	16.335860%	\$ 531.00
Drilling Specialties Company	16.335860%	\$ 531.00
C. P. Lundgren	.238210%	\$ 8.00

APPROVAL OF EXPENDITURE

Requested by:

APPROVED:

M. T. Hedges
 M. T. Hedges

3-11-69
 Date

W. J. Thornton
 W. J. Thornton

3-10-69
 Date

MEJ/sb
 March 4, 1969

Above pipe is A.O.Smith Red thread pipe
 with the Redi thread - a union coupled jt.
 And is rated 450 PSF @ 150°
 (will test at 1200 PSI)

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 104
NW SW Section 14, T28N, R31E, Roosevelt County, Montana

Well completed in the Madison C-3 Zone with perforations at 5921-26'. The well flows on open choke (3/4") at 575 BPPD with 97% water cut at 70# PSI tubing pressure.

East Poplar Unit No. 69 has a Reda 30 hp, 36 stage pump charged to that location, but not being used. The pump is designed to lift approximately 2,200 BPPD.

It is proposed to have the Reda pump repaired and transferred and run in East Poplar Unit No. 104 to a setting depth of 1100'.

It is expected to produce 50 to 60 BOPD. This rate would payout pump repair and associated cost in 30 days or less.

ESTIMATED COST

Workover Rig	\$ 2,250
Reda Pump Repair, Freight, and Serviceman	\$ 9,300
Vacuum Truck	\$ 600
Roustabout Crew	\$ 400
Electrician	\$ 400
Hydro Test Tubing	\$ 1,000
Credit for 158 joints 2-3/8", 4787', Condition 3 Tubing	(\$ 2,150)
Supervision and Misc.	\$ 400
Total Estimated Cost	\$12,400

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	\$ 3,900
Placid Oil Company	33.545035%	\$ 4,160
Phillips Petroleum Company	16.335860%	\$ 2,025
Exxon Company, U.S.A.	16.335860%	\$ 2,025
Mamoco Company	2.096565%	\$ 260
C. P. Lundgren	.238210%	\$ 30

APPROVAL OF EXPENDITURE

Requested by:

Approved by:

Billy B. Melear
 Billy B. Melear

9-24-80
 Date

A. W. Simpson

 Date

8-15-80 20 BPPD 472 BPPD 24 32" Tbg, W

3-27-80 41 BPPD 2016 BPPD 24 (2000 gal nitrifier) 12-11-80

A.P.E. NO. 104

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 104
NW SW Section 14, T28N, R51E, Roosevelt County, Montana

Well completed in the Madison C-3 Zone with perforations at 5921-26'. The well flows on open choke (3/4") at 575 BPPD with 97% water cut at 70# PSI tubing pressure.

East Poplar Unit No. 69 has a Reda 30 hp, 36 stage pump charged to that location, but not being used. The pump is designed to lift approximately 2,200 BPPD.

It is proposed to have the Reda pump repaired and transferred and run in East Poplar Unit No. 104 to a setting depth of 1100'.

It is expected to produce 50 to 60 BOPD. This rate would payout pump repair and associated cost in 30 days or less.

ESTIMATED COST

Workover Rig	\$ 2,250
Reda Pump Repair, Freight, and Serviceman	\$ 9,500
Vacuum Truck	\$ 600
Roustabout Crew	\$ 400
Electrician	\$ 400
Hydro Test Tubing	\$ 1,000
Credit for 158 joints 2-3/8", 4787', Condition 3 Tubing	(\$ 2,150)
Supervision and Misc.	\$ 400
Total Estimated Cost	\$12,400

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	\$ 3,900
Placid Oil Company	33.545035%	\$ 4,160
Phillips Petroleum Company	16.335860%	\$ 2,025
Exxon Company, U.S.A.	16.335860%	\$ 2,025
Munoco Company	2.096565%	\$ 260
C. F. Lundgren	.238210%	\$ 30

APPROVAL OF EXPENDITURE

Requested by:

Approved by:

Billy O. Melear
Billy O. Melear

9-29-80
Date

W. Simpson 10/14/80
W. Simpson Date

Date Job Completed
12/12/80
Approximate Cost
\$24,318

BGM/sb
September 29, 1980

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 104
NW SW SECTION 14, T28N, R51E, ROOSEVELT COUNTY, MONTANA

PROPOSAL AND JUSTIFICATION:

The A.F.E. was over-expended for the following reasons: The 2 3/8" tubing was stuck, and in the process of recovery was damaged, and required complete replacement. The Reda Pump was installed and lack of fluid, necessitated a small acid stimulation. After stimulation the well flowed and was tested flowing 40 BOPD and 1,980 BWPD. The increase in production resulting from workover was 22 BOPD and 1,500 BWPD.

ESTIMATED COSTS

	Orig. Est.	Estimated Over Expenditures	Revised Total
Workover Rig	2,250	4,750	7,000
Reda Pump Repair, Freight, & Serviceman	9,500	(8,432)	1,068
Vacuum Truck	600	---	600
Roustabout Crews	400	---	400
Electrician	400	200	600
Hydro Test Tubing	1,000	(1,000)	---
3,800' 2 7/8" EUE tbg.	---	11,000	11,000
Credit for 2 3/8" tubing			
Cond. 4 (Junk)	(2,150)	1,200	(950)
Acidize and Related Costs	---	3,200	3,200
Misc. Valves and Fittings	---	400	400
Supervision and Miscellaneous	400	600	1,000
TOTAL ESTIMATED COSTS	\$12,400	\$11,918	\$24,318

APPORTIONMENT OF SUPPLEMENTAL COSTS

Murphy Oil Corporation	31.448470%	\$3,748
Placid Oil Company	33.545035%	\$3,998
Phillips Petroleum Company	16.335860%	\$1,947
Exxon Company, U.S.A.	16.335860%	\$1,947
Munoco Company	2.096565%	\$ 250
C. F. Lundgren.	.238210%	\$ 28

APPROVAL OF EXPENDITURE

Requested by:

Approved by:

Billy G. Melear 12/31/80
Date

Thom D. Samson 1/7/81
Date

BGM/ch
1/7/81

approximate cost
24,318

Date Job Completed
10/12/80

EPUR 104

DIST. 6/24/92

A.F.E. No. 2-0407-010

MURPHY OIL USA INC
AUTHORITY FOR EXPENDITURE
EAST POPLAR UNIT NO. 104
SW SE SECTION 14, T28N, R51E
ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION:

This well is currently producing from the C-3 Zone at 5921'-26' at the rate of 12 BOPD and 798 BWPD. It is proposed to perform a MOC polymer squeeze on this well. It should lower the water cut and increase oil production.

ESTIMATED COST

HOWCO Cement and Polymer -----	\$12,500
Workover Rig -----	4,000
Tools -----	2,000
Mud -----	1,600
Trucking -----	1,000
Supervision & Miscellaneous -----	900
TOTAL ESTIMATED COST	\$22,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil USA, Inc.	60.363718%	\$13,280
Doil Oil & Gas	20.965647%	4,612
Exxon Company U.S.A.	16.335860%	3,594
Munoco Company	2.096565%	462
C.F. Lundgren	.238201%	52

APPROVAL OF EXPENDITURE

Requested by:

Approved by:

Raymond Reede 4-6-92
Raymond Reede Date

Sidney W. Campbell 4-21-92
Sidney Campbell Date

Paul E. Ramsey 6/18/92
Paul Ramsey Date

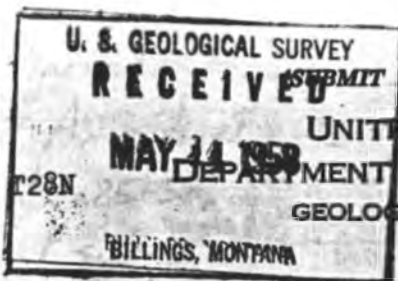
RR/jh
April 6, 1992

DATE JOB COMPLETED_____
APPROXIMATE COST_____
BY_____

PERMIT
APPLICATIONS



R51E



SUBMIT IN TRIPLICATE

UNITED STATES

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BILLINGS, MONTANA

Indian Agency Ft. Peck

Allottee _____

Lease No. 3578 Mary Foote

et al
I-37-Ind-12879

Ref. 42

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

May 12, 1958

Well No. 104 is located 1319 ft. from N line and 1981 ft. from E line of sec. 14

NW SW SE Section 14 (4 Sec. and Sec. No.)

East Poplar (Field)

28N (Twp.)

51E (Range)

M.P.M. (Meridian)

Roosevelt (County or Subdivision)

Montana (State or Territory)

MAY 15 1958

CASPER, WYOMING

The elevation of the derrick floor above sea level is 2220 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spudded 7 P.M., May 6, 1958

COPY RETAINED DISTRICT OFFICE

May 8, 1958 1033' - Ran 32 jts. (1007.14') of 9-5/8" O.D., 32.3#, 8rd. thd., H -40, ST&G, R-2, Class 1 American casing. Landed 12.44' below RKB and set with Howco float shoe at 1019.58'. 2 Howco centralizers spaced at 982' and 827'. Cemented with 400 sacks regular cement with 1% CaCl₂. Clean cement to surface. Bumped plug with 1400#, plug down at 9:15 A.M. Released pressure, float held ok.

May 10, 1958 - Tested casing and BOP with 1000# for 30 minutes, held ok.

Approved MAY 14 1958

[Signature]
District Engineer

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address P. O. Box 447

Poplar, Montana

By *[Signature]*

Title Field Production Supt.

(SUBMIT IN QUADRUPPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

MAC 36-3.18(10)-S18020
MAC 36-3.18(10)-S18030
MAC 36-3.18(10)-S18140
MAC 36-3.18(10)-S18170
MAC 36-3.18(10)-S18200
MAC 36-3.18(10)-S18310
MAC 36-3.18(10)-S18330
MAC 36-3.18(14)-S18380

NOTICE
THIS FORM BECOMES A
PERMIT WHEN STAMPED
APPROVED BY AN AGENT
OF THE BOARD.

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement	X	Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

Following is a notice of intention to do work on land. ~~XXXXXX~~ leased described as follows:
~~XXXXXX~~ LEASE East Poplar Unit No. 104

MONTANA Roosevelt East Poplar Unit
(State) (County) (Field)

Well No. 104 W.C. SE 1/4 14 T28N R51E MPM
(m. sec.) (Township) (Range) (Meridian)

The well is located 1320 ft. from XXX line and 1980 ft. from E line of Sec. 14
S XXX

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2208'

READ CAREFULLY

DETAILS OF PLAN OF WORK

READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

In an attempt to move more fluid from the C-3 Zone a Rada pump was run in this well. Fluid entry is not enough to keep the Rada pump running.

In order to increase production the well will be acidized with 2,000 gallons MCA acid in an attempt to increase fluid entry. The well can be expected to produce 50 to 60 BOPD.

Approved subject to conditions on reverse of form

Date JAN 30 1981

ORIGINAL COPY SIGNED BY:

By Claire F. Haughey, Field Supervisor
District Office Agent TitleCompany Murphy Oil CorporationBy ORIGINAL SIGNED BY
BILLY G. MELEARTitle District SuperintendentAddress P.O. Box 547, Poplar, Montana 59255

BOARD USE ONLY									
API WELL NUMBER									
STATE	2	5							
COUNTY									
WELL									

NOTE:—Reports on this form to be submitted to the appropriate District for approval

WHEN USED AS PERMIT TO DRILL, PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL IF WELL NOT SPUDDED OR EXTENSION REQUESTED.

OVER

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. ☒ oil well ☒ gas well ☐ other

2. NAME OF OPERATOR

Murphy Oil Corporation

3. ADDRESS OF OPERATOR

P.O. Box 547, Poplar, Montana

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)

AT SURFACE: 1320 N/S line and 1980 W/E line

AT TOP PROD. INTERVAL:

AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:

TEST WATER SHUT-OFF ☐

FRACTURE TREAT ☐

SHOOT OR ACIDIZE ☒

REPAIR WELL ☐

PULL OR ALTER CASING ☐

MULTIPLE COMPLETE ☐

CHANGE ZONES ☐

ABANDON* ☐

(other) ☐

SUBSEQUENT REPORT OF:

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

In an attempt to move more fluid from the C-3 Zone a Reda pump was run in this well. Fluid entry is not enough to keep the Reda pump running.

In order to increase production the well will be acidized with 2,000 gallons MCA acid in an attempt to increase fluid entry. The well can be expected to produce 50 to 60 BOPD.

Subsurface Safety Valve: Manu. and Type _____

18. I hereby certify that the foregoing is true and correct

ORIGINAL SIGNED BY

SIGNED BILLY G. MELEAR

TITLE Dist. Supt.

DATE

APPROVED BY

Charles Chalko

(This space for Federal or State office use)

ACTING DISTRICT ENGINEER

DATE

CONDITIONS OF APPROVAL IF ANY:

Form Approved.

Budget Bureau No. 42-R1424

5. LEASE F.T. 2208' G.L.

BLM-A-012286 I-37-12879

6. IF INDIAN, ALLOTTEE OR TRIBES NAME

Fort Pack

7. UNIT AGREEMENT NAME

East Poplar Unit

8. FARM OR LEASE NAME

East Poplar Unit

9. WELL NO.

No. 104

10. FIELD OR WELDCAT NAME

East Poplar Unit

11. SEC., T., R. & OF BLK. AND SURVEY OR AREA

2208' G.L.

12. COUNTY OR PARISH

Roosevelt

13. STATE

Montana

14. API NO.

15. ELEVATIONS (SHOW DF, KDB AND WD)

2208' G.L.

(NOTE: Report required for multiple completions or zone change on Form 9-330.)

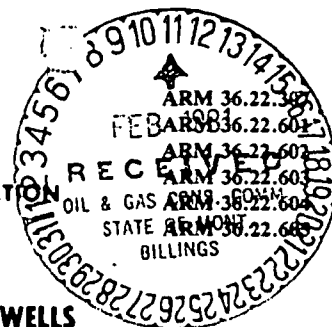
(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

NOTICE
THIS FORM BECOMES A
PERMIT WHEN STAMPED
APPROVED BY AN AGENT
OF THE BOARD.



Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	X
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

February 10, 1981

Following is a ~~notice of intention to do work~~ report of work done on land ~~owned~~ leased described as follows:

LEASE East Poplar Unit No. 104

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)
Well No. 104 w/c SE 1/4 Section 14 T28N R51E MPM
(m. sec.) (Township) (Range) (Meridian)

The well is located 1320 ft. from ~~XXXX~~ S line and 1980 ft. from ~~XXXX~~ E line of Sec. 14

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2208' G.L.

READ CAREFULLY

DETAILS OF PLAN OF WORK

READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

The C-3 Zone perforations, 5921-5926', were acidized using 2,000 gallons 15% MCA acid. Maximum pressure 600 PSI Minimum pressure 290 PSI

Workover Potential: Well flowing at the rate of 2,000 BFPD 40 BOPD 1,960 BFPD 98% W.C.

Approved subject to conditions on reverse of form

Date FEB 27 1981

ORIGINAL COPY SIGNED BY:

By Claire F. Haughay, Field Supervisor
District Office Agent

Title

Company Murphy Oil Corporation

By ORIGINAL SIGNED BY
BILLY G. MILLER

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

BOARD USE ONLY
API WELL NUMBER

STATE	COUNTY	WELL
25		

NOTE:—Reports on this form to be submitted to the appropriate District for approval
DRILLING PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL. UPON WRITTEN
REQUEST PRIOR TO EXPIRATION DATE, ONE 90 DAY EXTENSION MAY BE GRANTED.

OVER

OPERATION
STATE C

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil ☒ well gas ☐ well other ☐
2. NAME OF OPERATOR
Murphy Oil Corporation
3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1320' N/S line and 1980' W/E line
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	<input type="checkbox"/>	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	<input checked="" type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>	<input type="checkbox"/>
(other)	<input type="checkbox"/>	<input type="checkbox"/>

5. LEASE FORT PECK
I-37-IND-12879
6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Assiniboine-Sioux
7. UNIT AGREEMENT NAME
/East Poplar Unit
8. FARM OR LEASE NAME
East Poplar Unit
9. WELL NO.
No. 104
10. FIELD OR WILDCAT NAME
East Poplar Unit
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
NW SW Section 14, T28N, R51E
12. COUNTY OR PARISH
Roosevelt
13. STATE
Montana
14. API NO.
15. ELEVATIONS (SHOW DF, KDB, AND WD)
2208' G.L.

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The C-3 Zone perforations, 5921-5926', were acidized using 2,000 gallons 15% MCA acid. Maximum pressure 600 PSI Minimum pressure 290 PSI

Workover Potential: Well flowing at the rate of 2,000 BFPD 40 BOPD 1,960 BWPD 98% W.C..

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Billy S. McLean TITLE Dist. Supt. DATE February 10, 1981

APPROVED BY Charles E. Tucker (This space for Federal or State office use)
CONDITIONS OF APPROVAL, IF ANY: _____
ACTING DISTRICT ENGINEER
DATE 2/11/81
FOR U.S. GOVERNMENT USE ONLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

I-37-IND-12879

6. If Indian, Allottee or Tribe Name

Assiniboine-Sioux

7. If Unit or CA, Agreement Designation

East Poplar Unit

8. Well Name and No.

EPU No. 104

9. API Well No.

05021

10. Field and Pool, or Exploratory Area

East Poplar Unit

11. County or Parish, State

Roosevelt
Montana

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Murphy Oil USA, Inc.

3. Address and Telephone No.

P.O. Box 547, Poplar, MT 59255 768-3612

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NW SW Section 14, T28N, R51E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other Water Shutoff Squeeze
☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well is currently producing from the C-3 Zone at 5921'-26' at the rate of 12 BOPD and 798 BWPD. It is proposed to perform a MOC polymer squeeze on this well. It should lower the water cut and increase oil production.

JUN 1992
Bureau of Land
Management
Miles City,
Montana

14. I hereby certify that the foregoing is true and correct

Signed Ramona Reed Title District Manager

Date 6-24-92

(This space for Federal or State office use)

Approved by David E. Dwyer Title ADM - Minerals

Conditions of approval, if any:

Date JUN 30 1992
See for
Conditions of Approval

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side



R57E

A 10x10 grid with a horizontal line across the middle. The top five rows are labeled 'X' and the bottom five rows are labeled 'Y'.

U. S. GEOLOGICAL SURVEY
RECEIVED
JUN 24 1958
BILLINGS, MONTANA
UNITED STATES

U. S. LAND OFFICE Billings
SERIAL NUMBER 1-57-541-1287
LEASE OR PERMIT TO PROSPECT 3575

T28N U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF GEOLOGICAL SURVEY

JUN 24 1965

R/42

LOG OF OIL OR GAS WELL

Company Murphy Corporation Address Poplar, Montana
Lessor or Tract Allotted Mary Foote et al Field East Poplar State Montana
Well No. 104 Sec. 14 T. 28N R. 51E Meridian M.P.M. County Roosevelt
Location 1319 ft. XXX of N. Line and 1981 ft. XXX of E. Line of Section 14 Elevation 2220' K.B.
(If North of section line, use N. line)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed

Date June 19, 1958

Title Field Production Supt.

The summary on this page is for the condition of the well at above date.

Commenced drilling May 6, 1958 Finished drilling June 8, 1958

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 5921 to 5926 0 No. 4, from _____ to _____
No. 2, from _____ to _____ No. 5, from _____ to _____
No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from _____ to _____ No. 3, from _____ to _____
No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
9-5/8"	32.00	8rd.	Amer.	1007.11	Howco Float				Surface
5-1/2"	15.50	8rd.	Amer.	59.60	Howco Full opening Float				Long String

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9-5/8	1019.58	400	Pump & Plug		
5-1/2	5956.00	300	Pump & Plug		

MARK

PLUGS AND ADAPTERS

Heaving plug—Material	Length	Depth set
Adapters—Material	Size	

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
		SEE ATTACHED SHEETS				

TOOLS USED

Rotary tools were used from 0 feet to 5957 feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

I.P. June 13, 1958 Put to producing June 8, 1958

The production for the first 24 hours was 223 barrels of fluid of which 99% was oil; -----% emulsion; 1% water; and -----% sediment. 100 Gravity, °Bé. 39.6 @ 60 degrees

If gas well, cu. ft. per 24 hours Gallons gasoline per 1,000 cu. ft. of gas

Rock pressure, lbs. per sq. in.

EMPLOYEES

Zach Brooks Drilling Company, Driller _____, Driller
_____, Driller _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
		SEE ATTACHED SHEETS	
		SEE FOLLOWING SHEETS	

IDENTIFICATION RECORD-Continued

Poplar

WELL DRILLING PLAN

Field or Area East Poplar Unit Division Billings

County Roosevelt Total Anticipated Depth 5925'

Well Location SE/4 of Section 14-T28N-R51E (1980' fs1 & 1320' fs1)

Lowest fresh water sand (for surface casing program) 90'

Casing and tubing program:

	<u>From</u>	<u>To</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Bit Size</u>
Conductor						
Surface	0	1000'	9-5/8"	32.75#	H	12-1/4"
Intermediate						
Production	0	5905'	5-1/2"	15.50#	J	8-3/4"
Tubing	0	5905'	2-7/8"	6.50#	J	E.U.E.

Potential Drilling Hazards None expected

Mud Program Drill surface hole with fresh water and allow mud weight to build to approximately 10 PPG. Use native mud and chemical to 4000', then convert to gyp mud.

Coring Method and Size Core Bits to be used 6-1/8" Diamond

Intervals Cores to be analyzed All porosity

Method of Drilling Stem Testing 2 hour tests

Anticipated Completion Zone "C-5" Zone

Method of open pay, perforation or open hole, and approximate interval: Set pipe on top of "C-5" Zone. Move in workover rig and drill into "C-5" porosity with fresh water. The well is expected to begin flowing as soon as sufficient porosity is uncovered.

Expected Formation Treatments 500 gallons of etching acid

Expected logs for development, evaluation, or completion purposes Gamma Ray-Neutron inside production casing from 3000' to total depth.

Remarks:

Date 4-11-58

Production Superintendent *H. M. ...*

Poplar

GEOLOGICAL PROSPECTUS

Division Billings Lease No. 3578
Operator Murphy Corporation Well Name East Poplar Unit Well No. 104
Location 1320 N/S, 1980 W/E Section 14 Township 28 N Range 51E
Pool Name East Poplar Unit County Roosevelt State Montana
Type of Well: Oil X GAS Exploratory Development X
Objective Formation Madison Projected Depth 5925'
Well Elevation 2205' Gr. (Est) and 2215' K.B. (est).

Expected Stratigraphic Section and Estimated Depths:

Judith River-----	846	Spearfish-----	4689
Eagle-----	1241	Amsden-----	4816
Niobrara-----	2101	Heath-----	4946
Greenhorn-----	2446	Otter-----	5091
Muddy-----	3017	Kibbey Sd.-----	5252
Dakota-----	3234	Kibbey Ls.-----	5390
Morrison-----	3611	Madison-----	5503
Swift-----	3671	"A" Zone-----	5585
Riardon-----	4003	"B" Zone-----	5732
Piper Shale-----	4361	"C" Zone-----	5850
Piper Ls.-----	4441	Total Depth-----	5925

Anticipated Pay Horizons, Net Pay and Expected Depths:

A-2 Zone 8' 5595 (-3380)
B-1 Zone 6' 5732 (-3517)
B-2 Zone 14' 5750 (-3535)
C-3 Zone 10' 5871 (-3658)
C-5 Zone 10' 5913 (-3698)

Recommended Coring and Formation Testing Program:

Core upper Heath - 20'
Circulate out the lower Heath sand and test on show.

Recommended Sampling and Logging Program:

20' samples from 2000' to 4000'	2" ES from base of surface pipe to TD
10' samples from 4000' to T.D.	5" ES from 2000' to TD
	5" HL from 2000' to TD

Remarks: (Including pertinent data relative to location accessibility, unusual drilling problems due to surface or subsurface conditions, etc.)

Plans are to drill 37 feet below the C-3 and set production string. Then drill out and drill the extra 10 to 20 feet necessary to reach the C-5. The ES and Micro log will be run to the total depth of production casing (approximately 5905). The radioactive log will be run to approximately 5925' T.D.

W. J. Moore 4-10-58
Division Geologist Date

WJM/vmf

EAST POPLAR UNIT WELL NO. 104

COMPLETION DATA

Casing Program:

- 5-8-58 1033' - Ran 32 jts. (1007.11') of 9-5/8" O.D., 32#, 8rd. thd., ST&C, H-40, R-2, American Class 1 casing. Landed 12.44' below RKB and set with Howco float shoe at 1019.58'. Two Howco centralizers spaced at 982' and 827'. Cemented with 400 sacks regular cement with 1% CaCl₂. Clean cement to surface. Bumped plug with 1400#, plug down at 9:15 P.M., released pressure, float held o.k.
- 5-23-58 5957' T.D. - Ran 156 jts. (5946.60') of 5-1/2", 15.50#, J-55, 8rd. thd., R-2, Class 1, American casing. Landed 9.40' below RKB and set 1' off bottom at 5956'. Ran Howco full-opening float shoe on bottom, baffle collar at 5916'. Ran 6 B&W centralizers at 5950, 5910, 5822, 5760, 5652 and 5583'. Ran 6 1/4 B&W scratchers spaced as follows: 10' 5566'-5603'; 5' 5603'-5682'; 10' 5682'-5760'; 5' 5760'-5837'; 10' 5837'-5877'; and 5' 5877'-5956'. Broke circulation with 200#. Circulated 30 minutes. Cemented with 300 sacks 1.1 Pozmix, 6% gel, 1/2# per sack Flowseal, 1 1/2# per sack Tuffplug. Slurry wt. 11.4# per gal. Reciprocated casing 30'-35' while cementing. Pumped plug down with fresh water. Bumped plug with 1600 psi at 5:55 A.M., 5-24-58. Had full returns throughout job. Released pressure, float held. Waited 1 hour to watch mud in annulus, hole standing full. Set slips.
- 5-24-58 5957' T.D. - Cut off casing and installed well head. Released Zach Brooks rig at 6:00 P.M., 5-24-58.
- 5-28-58 5957' T.D. - Moved in pulling unit to complete. Ran 2-3/8" tubing with 4-3/4" bit. Tested casing and well head with 2000# pressure, held o.k.
- 5-29-58 5958.5' T.D. - Displaced fresh water with salt water. Rigged up power swivel and drilled baffle collar, cement, shoe and drilled 2.5' of formation oil show in drilling fluid, flowed 1/2" stream. Started swabbing. Swabbed 2 hrs., shut in on account of darkness. Fluid level was at 800'.
- 5-30-58 5958.5' T.D. - Fluid was 50' from top. TP--70#, CP--60#. Swabbed 11 hrs. Last 3 hrs., swabbed at estimated rate of 5 to 7 BFPH, 95% water. Fluid level was at 5300'. Chlorides 50,000 PPM.
- 5-31-58 5958.5' T.D. - Pulled tubing. Ran Lane Wells Gamma Ray-Neutron log.
- 6-1-58 5958.5' T.D. - Ran tubing with Baker full bore packer. Squeezed open hole, 5956'-5958.5' with 100 sacks Pozmix cement. Broke formation with 1000 psi. Squeezed 100 sacks out in formation. Maximum pressure 2000 psi; would not hold. Cleared tool and waited 4 hours on cement. Squeeze #2: 5956'-5958.5', with 75 sacks regular cement and Howco retarder. Broke formation with 1200 psi. Squeezed 75 sacks cement out in formation. Maximum

Completion Data Continued

- pressure 2200 psi; would not hold. Cleared tool and waited 4 hours. Squeeze #3: open hole 5956'-5958.5' with 25 sacks regular cement and 50 sacks regular cement with Howco retarder added. Broke formation with 1800 psi. Squeezed 75 sacks cement out in formation. Maximum pressure 2200 psi; would not hold. Waited 9 hours. Squeeze #4: open hole, 5956'-5958.5' with 75 sacks regular cement and Howco retarder. Broke formation with 1800 psi. Squeezed out 75 sacks cement in formation. Maximum pressure 2400 psi; would not hold. Cleared tool to wait 4 hours for Squeeze #5.
- 6-2-58 5958.5' T.D. - Surface casing crumbled due to wear caused from Kelly while drilling. 9-5/8" and 5-1/2" casing fell down 1'. Re-inforced 9-5/8" surface casing and straightened head. Squeeze #5: open hole, 5956'-5958.5' with 25 sacks regular cement and 50 sacks regular cement with Howco retarder added (total 75 sacks cement). Broke formation with 1800# psi. Squeezed out 52.5 sacks cement out in formation. Maximum squeeze pressure 4200 psi, held ok. Left 2.5 sacks cement in 5-1/2" casing. Reversed out 20 sacks of cement. Pulled tubing to remove packer. Set Baker packer in top jts. of 5-1/2" casing. Picked up 8" of slack with 62,000# pull, maximum safe pull with unit. Started in hole with tubing and bit. Note: RKB is now 1' lower due to casing dropping. 5-1/2" casing landed 10.40' below RKB.
- 6-3-58 5969' T.D. - Rigged up power swivel and drilled out cement to total depth (5958.5'). Tested squeeze with 1200 psi, would not hold. Pressure would bleed off 100# in 5 to 7 minutes. Drilled to 5967.5' and pressure tested. Formation would take fluid at 1100# at the rate of 1/4 BPM. Drilled to 5969'. Reversed circulation to clean hole, would not flow, 9.1# salt water. To swab test today.
- 6-4-58 5969' T.D. - Overnight shut-in pressure---175# TP, 125# CP. Pressure believed to be caused from heat. Swabbed down to 5700', no apparent fluid movement. Shut-in overnight (13 hours). Made run with swab, recovered 50' of oil and 200' of water. Estimated fillup overnight equalled 150' fluid.
- 6-5-58 5969' T.D. - Ran tubing with Howco open hole packer with 10.00' of tail. Spotted acid down tubing and set packer at 5959' and pressured casing with 900#, would leak off very slow, 100# in 4 to 6 minutes, lost all pressure on casing after injecting 6 barrels acid. Acidized open hole, 5959'-5969' with 500 gallons Howco acid. Acid started feeding at 800#. Injected 6 barrels acid at rate of 1/2 BPM at 1000 psi, then packer gave way. Injected remainder of acid at rate of 1/2 BPM at 800 psi. Bleed down pressure 0#. Opened to pit. Spent acid to surface in 15 minutes. Flowed salt water with trace of oil to pit for 30 minutes. Shut tubing in and casing pressure came up indicating communication. 1 hour flow test, 1/4" choke, flowed at rate of 438 BFPD, with trace of oil. TFP--340#, CFP--500#. 1 hour open flow test, flowed at rate of 2586 BFPD with trace of oil. TFP--75#, CFP--475#. Shut in overnight. TSIP--400#, CSIP--580#.

Completion Data Continued

- 6-6-58 5969' T.D. - Killed well with 10.2# mud. Pulled tubing to remove Howco open hole packer. Ran Baker junk basket on wireline. Top of retainer at 5946'. Ran tubing and installed BOP. Tested packer and BOP with 2000 psi, held ok. Squeezed open hole (5954'-5969') with 75 sacks regular cement, Howco retarder added. Broke formation with 1600 psi. Squeezed 67 sacks out in formation. Maximum squeeze pressure 4000 psi, held ok. Left one sack cement on top of retainer. Reversed out 7 sacks cement. Displaced mud with salt water. Shut in overnight.
- 6-7-58 5944.5' FBTD - Pulled tubing and removed Baker stinger. Perforated "C-3" Zone (5921'-5926') with Wireline's dyna jet casing gun, 4 holes per ft. Ran Baker junk basket. Set Baker Model "D" production packer on wireline. Top of packer at 5915'. Ran tubing with Baker seal assemblies, locator sub, and 3' tail pipe. Swabbed tubing down to 4500'. Let set overnight.
- 6-8-58 5944.5' FBTD - Tubing filled up overnight. TSIP--800# psi. Opened to pit, flowed small stream. Swabbed 6 hrs., recovered a total of 91 barrels fluid, 3 to 6% water. Last 2 hours, swabbed at the rate of 321 BFPD, 3 to 4% water (311 BOPD, 10 BWPD). Fluid level was steady at 4300'. Installed choke and let well fill up. On 3 hour test, 1/4" choke, flowed at rate of 201 BFPD, 3% water (195 BOPD, 6 BWPD), TFP--25#. 10 hour test, 12/64" choke, flowed at rate of 168 BFPD, 2% water (165 BOPD, 3 BWPD), choke was plugging.
- 6-9-58 5944.5' FBTD - On a 1 hour flow test, open flow, flowed at the rate of 233 BFPD, 2% water (228 BOPD, 5 BWPD), TFP--25 psi. On a 1 hour test, 1/4" choke, flowed at rate of 246 BFPD, 2% water (241 BOPD, 5 BWPD), TFP--75 psi. On a 1 hour test, 12/64" choke, flowed at rate of 219 BFPD, 2% water (215 BOPD, 4 BWPD), TFP--100 psi.
- 6-10-58 5944.5' FBTD - On 12 hour test, 1/4" choke, flow rate 200 BFPD, 3% water (194 BOPD, 6 BWPD), TFP--100 psi, choke plugging.
- 6-11-58 5944.5' FBTD - On a 1 hour test, P-47 choke, (1/4"), flowed 219 BFPD, 1% water (217 BOPD, 2 BWPD), TFP--75#.
- 6-12-58 5944.5' FBTD - On a 17-1/2 hour test, P-47 choke (1/4"), flow rate 207 BFPD, 2% water (203 BOPD, 4 BWPD), TFP--85#.
- 6-13-58 5944.5' FBTD - On a 17 hour test, P-47 choke, flowed at the rate of 223 BFPD, 1% water (221 BOPD, 2 BWPD), TFP--75#. This is the initial potential test. To drop from report.
- 6-17-58 5944.5' FBTD - BHP run 6-17-58. Perforated tubing 1' above locator sub with McKinley gun, 1 - 3/8" hole to circulate with hot oil to combat paraffin.

Completion Data Continued (Tubing Record)

Tubing Record: 194 jts. 2-3/8", 4.70#, J-55, Std. thd., R-2, American,
Class 2 tubing

Below RKB	9.40'
2-3/8" tubing subs 6' & 4'	10.20'
Top joint 2-3/8" tubing	30.00'
193 joints 2-3/8" tubing	5860.69'
Baker locator sub	.56'
Top of Model D production packer	5910.85' = 5915' W.L.
Baker seal unities	2.65'
Tail pipe	<u>3.00'</u>
Bottom of tubing	5916.50'

EAST POPLAR UNIT WELL NO. 101

SURFACE EQUIPMENT RECORD

1. Well Head Equipment:
 - 1 - Cameron 10" Series 600 x 9-5/8", 8rd. thd., Type W.F. Casing Head complete with 2 - 2" outlets, 1 - 2" Cameron L.P. valve, 2000# W.P., 1 - 2" x 8" nipple and 1 - 2" bull plug.
 - 1 - 10" x 5-1/2" Cameron Type G.A., automatic casing hanger, complete
 - 1 - 6", Series 600 x 2", Series 600 x 2" E.U.E., single studded tubing head adapter
 - 1 - 2" Figure 501032 Cameron L.P. valve
 - 1 - 2", 4000# T, 2000# W.P., McEvoy gate valves
 - 1 - 2", Type J.E. 2 P., 4000# T, 2000# W.P. OCT Flow wing with positive choke.
2. Lifting Equipment: None
3. Compressor, Other Installation: None
4. Storage Facilities: Oil produced goes into East Poplar Unit "H" Battery.
5. Flowline: Approximately 2500' of 3", 6.56#, R-3, P.E. line pipe.

EAST POPLAR UNIT WELL NO. 101

SUB-SURFACE EQUIPMENT RECORD

1. 1007.11' of 9-5/8" O.D., 32#, 8rd. thd., H-40, STAC Casing
5946.60' of 5-1/2" O.D., 15.50#, 8rd. thd., J-55, STAC Casing
5890.69' of 2-3/8" O.D., 4.70#, 8rd. thd., J-55, E.U.E Tubing
2. Packers - Baker Model "D" Production Packer at 5915'
Baker Model "X" Cement Retainer at 5946'
3. Rods - None
4. Pump - None
5. Gas Valves - None
(No latch-on sub)

EAST POPLAR UNIT WELL NO. 104

WELL LOG DATA

TYPE OF LOG

INTERVAL LOGGED

Schlumberger Electrical Survey 2"	1021'	5956'
Schlumberger Microlog 2"	2220'	5954'
Lane Wells Gamma Ray-Neutron 2"	3000'	4000'
Lane Wells Gamma Ray-Neutron 5"	4000'	5958.5'

SCHLUMBERGER TOPS

	<u>Depth</u>	<u>Datum</u>	<u>Thickness</u>
Eagle	1256	+ 964	
Niobrara	2100	+ 120	
Greenhorn	2444	- 224	
Graneros	2655	- 435	
Muddy	3026	- 806	
Dakota Silt	3246	-1026	
Swift	3683	-1463	
Vanguard	4018	-1798	
Rierson	4204	-1984	
Piper Shale	4370	-2150	
Piper Limestone	4457	-2237	
Gypsum Springs	4523	-2303	
Spearfish	4704	-2484	
Amesden	4792	-2572	
Heath	4960	-2740	
Otter	5110	-2890	
Kibbey Sandstone	5264	-3044	
Kibbey Limestone	5414	-3194	
Madison	5513	-3293	
A-1	5594	-3394	4'
A-2	5605	-3385	8'
A-3	5620	-3400	6'
A-4	5638	-3418	24'
B-1	5754	-3534	9'
B-2	5772	-3552	15'
B-3	5794	-3574	6'
B-4	5826	-3606	5'
C-1	5902	-3682	?
C-3	5819	-3699	10'
C-4	5945	-3725	?
C-5 Estimated at	5965	-3745	?

EAST POPLAR UNIT WELL NO. 104

TESTS

The following tests were made with Schlumberger Wireline Formation Tester:-----

- Test #1 "A-1" Zone, 5645'. Tool open 14 minutes, 38 seconds, shut in 5 minutes. IBHFP and FBHFP less than 75#, SIHFP 2810#, Hydro 3125#. Recovered 4 quarts of salt water, no show of oil. Water had pale yellow fluorescence. Resistivity of mud filtrate 0.29 at 160 degrees F., resistivity of recovered sample .07 at 160 degrees F., chlorides 20,000 PPM.
- Test #2 Greenhorn, 2460'. Misrun, tool plugged with lost circulation material.
- Test #3 Greenhorn, 2460'. Misrun, tool plugged with lost circulation material.
- Test #4 "B-3" Zone, 5798'. Tool open 16 minutes, 50 seconds, shut in 13 minutes. IBHFP and FBHFP less than 75#, SIHFP 2550#, Hydro 3200#. Recovered 2.5 quarts salt water, no show of oil. Water had pale yellow fluorescence. Resistivity of mud filtrate 0.29 at 160 degrees F., resistivity of recovered sample 0.14 at 160 degrees F., chlorides 7,000 PPM.

EAST POPLAR UNIT WELL NO. 104

MUD PROGRAM SUMMARY

MUD SERVICE COMPANY:

Baroid

MUD ADDITIVES AND COST:

Material	Surface-5900'		5900'-T.D.		Total	
	Amt.	Cost	Amt.	Cost	Amt.	Cost
Aquagel	47	104.34	17	37.74	64	142.08
Baratos	1	29.00			1	29.00
Baroid	97	275.48	52	147.68	149	423.16
Fibertex			45	165.60	45	165.60
Tuf-Plug			16	184.00	16	184.00
Gypsum	25	56.25			25	56.25
C.S. Hulls			86	412.80	86	412.80
Imparmex	88	655.60	45	335.25	133	990.85
Persevative #5	18	414.00			18	414.00
Zeogel	37	125.06	18	60.84	55	185.90
Plug-git			25	96.50	25	96.50
Mud Cost		\$1659.73		\$1140.41		\$3100.14
Trucking		226.60		190.19		416.79
Crude Oil		185.00		125.00		310.00
Grand Total		\$1871.33		\$1755.60		\$3826.93

UNIT MUD COST:

	Total Cost	Feet Drld.	Cost per Foot	Days Used	Cost per Day
Spud - T.D.	\$3,826.93	5957	.64	18	\$212.61
Surface - 5900'	1,871.33	5900	.32	12	155.94
5900' - T.D.	1,755.60	957	1.83	4	438.90

MUD PROPERTIES:

Depth	Weight	Viscosity	Water Loss	Salt Content PPM	Remarks
1038	10.2	47	---	---	Surface hole
4500	10.0	36	20	Nil	Conversion
4800	10.2	37	17	3,300	Reduce W.L., add oil
5000	10.4	42	12.6	3,800	Drilling
5900	10.4	51	9	4,000	Drilling
5957	10.2	43	7.8	---	T.D.

SUMMARY:

A 12-1/4" hole was drilled to 1038' with fresh water and additives. The 9-5/8" surface casing was cemented at 1019' with 400 sacks regular cement.

Mud Program Summary Continued

An 8-3/4" hole was drilled to 4450' with fresh water where conversion to a gyp base mud was made with additions of gyp, starch, and preservatives. Mud properties from 4450' to 5124' were maintained as follows: weight --- 10.3 to 10.4 lbs. per gallon, viscosity --- 40 to 45 sec. per quart, water loss --- 15 cc. Addition of lease crude oil was started at 5100' to aid in controlling the weight and water loss. Below 5124' the water loss was lowered to 10 cc with the viscosity controlled at 45-55 sec per quart.

At 5925' a lost circulation zone was encountered. Approximately 100 barrels of mud were lost. Circulation was regained by adding 15 lbs. per lost circulation material. The pump pressure was reduced and the hole drilled to 5947' where circulation was again lost. Mud with 20 lbs. per barrel lost circulation material and gel was spotted 40' off bottom and circulation regained. The hole was conditioned for three hours and drill pipe pulled out without loss of mud. Logs were run and four tests were made with Schlumberger Wireline Formation Tester. The 5-1/2" production string was cemented at 5956'. Only one core was cut and no drill stem tests were run. Even though lost circulation increased the mud cost on this well, the total cost is low for a "C" Zone test.

EAST FOULAR UNIT WELL NO. 104DRILLING BIT RECORDS

Bit No.	Make	Size	Type	Ser. No.	From	To	Hours
1	Hughes	8-3/4	OSC3	82683	1036	3385	24
2	Hughes	"	OSC1G	67380	3385	3599	5-1/2
3	Hughes	"	OSC1G	17120	3599	4070	23
4	Hughes	"	OSC1G	17117	4070	4455	18-1/4
5	Hughes	"	OSC1G	7632	4455	4635	18-1/2
6	Hughes	"	OSC	3553	4635	4869	18-3/4
7	Hughes	"	OSC	15166	4869	4990	10
8	Hughes	"	OSC	29224	4990	5064	13-1/4
9	Hughes	"	OWV	3889	5064	5136	7
10	Hughes	"	OWV	4969	5136	5365	24
11	Hughes	"	OWV	18332	5365	5464	11-1/2
12	Hughes	"	OWV	4142	5464	5670	27-1/4
13	Hughes	"	OWV	5004	5670	5804	19-1/2
14	Hughes	"	OWV	3898	5804	5900	12-1/2
15	Hughes	"	OWV	18329	5900	5957	10-1/2

TOTCO RECORD

Totco
Footage

725
1033
1600
3485
4070
4840
5365

Degrees

1
1
1/4
1/2
3/4
1 1/4
1/2

EAST POPLAR UNIT WELL NO. 104

DIAMOND CORE BIT RECORD

<u>Core No.</u>	<u>From</u>	<u>To</u>	<u>Footage</u>	<u>Hours</u>	<u>Size</u>	<u>Make</u>	<u>No.</u>	<u>Type</u>	<u>Ser. No.</u>
1	1970	1990	20	5-1/4	7-7/8"	Christensen	G-18-E	E-1823	

EAST POPLAR UNIT WELL NO. 104

FUTURE POSSIBLE PRODUCING INTERVALS

A-1, A-2, A-3 and A-4 -- B-1, B-2, B-3 and B-4 -- C-1, C-4 and C-5

Because of structural position and results obtained from the Schlumberger Formation Tests.

SAMPLE DESCRIPTIONS

2000-2100	Shale: dark gray to black, sandy, also traces of white, very fine grained sandstone.
2100-2240	Shale: as above, some light gray to tan limestone, above sandstone.
2240-2440	Shale: gray, limey with traces of white, fine grained sandstone.
2445	<u>Sample Top Greenhorn</u>
2440-2540	Shale: dark gray, some buff to tan limestone, also traces of gray, fine grained sandstone.
2540-2660	Shale: dark gray, traces of above sandstone.
2660-2800	Shale: dark gray to black with stringers of white, fine grained sandstone, traces of brown, sandy shale.
2800-3020	Shale: dark gray, trace of gray sandstone.
3025	<u>Sample Top Muddy Sandstone</u>
3020-3080	Sandstone: medium grained, dirty (salt and pepper), traces of black, marine shale.
3080-3240	Shale: black, splintery.
3245	<u>Sample Top Dakota Siltstone</u>
3240-3480	Siltstone: dark gray, limey with above black shale.
3480-3560	Sandstone: white, medium to coarse grained, good permeability and porosity, no show.
3560-3600	Shale: black, marine.
3600-3640	Sandstone: white, medium grained, excellent permeability and porosity, no show.
3640-3680	Shale: brown, sandy, traces of pyrite and above sandstone.
3680	<u>Sample Top Swift</u>
3680-3780	Sandstone: white, medium grained, glauconitic, trace of black, marine shale.
3780-4020	Shale: dark gray to black, trace of gray-brown limestone.
4020	<u>Sample Top Vanguard</u>
4020-4080	Sandstone: dark gray, fine grained, traces of glauconite, dark gray shale.

Sample Descriptions Continued

- 4080-4200 Shale: dark gray to black.
- 4200 Sample Top Elerdon
- 4200-4240 Sandstone: dark gray, fine grained, calcareous with traces of gray, limey shale.
- 4240-4370 Shale: dark gray to black, trace of buff limestone.
- 4370 Sample Top Piper Shale
- 4370-4450 Shale: gray, sandy, traces of red, sandy shale, stringers of limestone (gray, dense) last 10'.
- 4457 Sample Top Piper Limestone
- 4450-4510 Shale: dark gray to black, traces of gray, finely crystalline limestone.
- 4510-4570 Shale: as above, some fine grained sandstone, traces of white anhydrite.
- 4570-4590 Sandstone: medium grained, dirty, poor permeability and porosity, mostly dark gray to black shale.
- 4590-4600 Shale: dark gray to black with traces of brown, sandy shale, some gray anhydrite.
- 4600-4640 Shale: dark gray, stringers of fine grained, gray sandstone and siltstone.
- 4640-4700 ~~Shale: as above~~ Shale: as above with gray anhydrite.
- 4700 Sample Top Spearfish Shale
- 4700-4720 Sandstone: red, medium grained, friable with black, marine shale.
- 4720-4790 Shale: black, marine with traces of limestone and red, sandy, limey shale.
- 4792 Sample Top Amsden
- 4790-4850 Dolomite: buff and pink, hard dense with traces of black, buttle shale.
- 4850-4870 Shale: dark gray to black, trace of buff colored limestone, some light gray, sandy siltstone.
- 4870-4880 Limestone: dark gray, dense with pin point porosity, also pink dolomite, dense, no permeability and porosity, black, marine shales.
- 4880-4890 Shale: black, splintery with above limestone and dolomite.

Sample Descriptions Continued

4890-4930 Limestone: gray to buff, traces of above black shale.

4930-4940 Shale: light gray, traces of fine grained sandstone.

4940-4960 Limestone: light gray, dense, traces of black shale.

4960 Sample Top Heath

4960-4970 Shale: multi-colored reds, grays, greens and purple, trace of above limestone.

4970-4990 Core No. 1 (Heath)

4990-5000 Shale: black, splintery with traces of purple quartz, sandstone. Interval 4995-5003' drilled like sandstone (rotary torqued up), no sand in sample.

5000-5030 Shale: as above.

5030-5060 Sandstone: white and red, medium to fine grained, fair permeability and porosity, very widely scattered fluorescence majority of the sandstone water wet.

5060-5100 Shale: black marine, traces of above sandstone first 10'.

5100-5110 Sandstone: white, fine grained, hard tight, traces of glauconite, poor permeability and porosity, scattered dead oil staining.

5110 Sample Top Otter

5110-5130 Shale: multi-colored red, orange, apple green with trace of above sandstone.

5130-5140 Shale: black, blocky.

5140-5150 Limestone: light gray, dense, some white, chalky limestone.

5150-5190 Shale: black, marine, traces of above limestone.

5190-5200 Limestone: dark gray, dense.

5200-5210 Limestone: gray, silty with light gray shale.

5210-5260 Limestone: dark gray, dense with light gray shale.

5260 Sample Top Kibbey Sandstone

5260-5270 Sandstone: red, fine grained, fair permeability and porosity, no show.

5270-5290 Sandstone: white, medium grained, well cemented, poor permeability and porosity, no show.

5290-5310 Shale: black, red and purple, traces of both above sandstone.

5310-5320 Sandstone: red, medium grained, angular, good permeability and porosity, no show.

Sample Descriptions Continued

- 5320-5330 Shale: multi-colored black, red with green limey siltstone.
- 5330-5360 Sandstone: red, fine to medium grained, sub-angular, good permeability and porosity, no show.
- 5360-5370 Shale: black, splintery.
- 5370-5380 Shale: multi-colored reds, grays and green.
- 5380-5410 Sandstone: red, fine grained, hard, tight, developing porosity last 10'.
- 5415 Sample Top Kibbey Limestone
- 5410-5420 Limestone: light gray, dense, trace of permeability and porosity, few colites.
- 5420-5430 Sandstone: white and red, fine grained, hard, tight.
- 5430-5450 Shale: red, sandy, trace of above limestone.
- 5450-5460 Limestone: dark gray, dense.
- 5460-5490 Shale: dark grays, black and reds, traces of above limestone.
- 5490-5510 Sandstone: red, fine grained, sub-angular, poor permeability and porosity, no show.
- 5515 Sample Top Madison
- 5510-5520 Shale: multi-colored with traces of soft, white anhydrite.
- 5520-5560 Limestone: dark gray, dense with above shale and anhydrite.
- 5560-5590 Anhydrite: dark gray with black, splintery shale.
- 5595 Sample Top A-1
- 5590-5610 Limestone: dark gray to black limestone, dense, traces of fluorescence and fair cut, also gray shale.
- 5610-5630 Limestone: dark gray, dense, traces of above limestone.
- 5630-5660 Limestone: gray, finely crystalline, traces of colites, good permeability and porosity, fair fluorescence and cut.
- 5660-5700 Limestone: dark gray, dense with stringers of gray, hard, anhydrite.
- 5700-5710 Salt Section (5703'-08')
- 5710-5720 Anhydrite: dark gray, dense.
- 5720-5730 Limestone: dark gray, micro-crystalline to dense, trace of permeability and porosity, no show.

Sample Descriptions Continued

5730-5750 Anhydrite: dark gray, dense, stringers of limestone.

5756 Sample Top B-1

5750-5760 Limestone: dark gray-brown, finely crystalline, good permeability and porosity, fair fluorescence and cut.

5760-5770 Anhydrite: dark gray, dense.

5773 Sample Top B-2

5770-5790 Limestone: gray-brown, finely crystalline, good permeability and porosity, good fluorescence and cut, traces of above anhydrite.

5791 Sample Top B-3

5790-5800 Dolomite: gray-brown, earthy, no visible permeability and porosity, or show.

5800-5820 Anhydrite: dark gray, dense, traces of above dolomite.

5820 Sample Top B-4

5820-5830 Dolomite: dark gray, earthy, trace of permeability and porosity, no show.

5830-5860 Limestone: dark gray to black, dense, trace of white anhydrite.

5860-5880 Limestone: dark gray, dense, trace of black shale.

5880-5890 Limestone: gray, micro-crystalline, trace of fluorescence, fair cut, poor permeability and porosity.

5890-5920 Limestone: dark gray to black, dense, no permeability and porosity.

5920 Sample Top C-3

5920-5930 Limestone: gray, earthy with fair fluorescence, good cut, good permeability and porosity, traces of above dark gray to black, dense limestone.

5930-T.D. Lost circulation material.

Only one core cut in Heath.

EAST POPLAR UNIT WELL NO. 101

CORE DESCRIPTIONS

<u>Core No. 1</u>		4970-4990', Cut 20', Rec. 17'
	C.T.	9, 14, 16, 16, 19, 16, 18, 16, 13, 16, 12, 11, 13, 17, 16, 15, 20, 18, 19, 20
Heath	3'	Shale: purple, silty, hard, dense
	3'	Shale: red dolomitic, 25 degree bedding planes, numerous slicken sides.
	10'	Shale: red, thin bands of green shale.
	1'	Sandstone: purple, medium grained, quartzitic, trace of permeability and porosity, no show.

EAST FOPLAR UNIT WELL NO. 104

CORE ANALYSIS REPORT

None

11 11 11

SERVICE & TESTING



December, 1980

EAST POPLAR UNIT NO. 104

WORKOVER HISTORY NO. 1

Lease and Well Number: East Poplar Unit No. 104
Field: East Poplar Unit County: Roosevelt State: Montana
Well Location: NW SW SE Section 14, T23N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: June 8, 1958 Date Last Workover: None
Producing Zone: C-3 Zone Perforations: 5921-5926'
T.D.: 5887' P.D.: 5944.5' Cumulative Production: 350,277 BO 1,294,395 BW
Latest Test: 575 EOPD 17 EOPD 533 BWPD

JUSTIFICATION FOR WORKOVER:

Well was completed in the Madison C-Zone with perforations at 5921-26'. The well flows on an open choke (3/4") at 575 EOPD with 97% water cut at 70 PSI.

It is proposed to run a Reda pump in the hole and set it at 1100'. It is expected to produce 50 to 60 EOPD and payout cost in 30 days or less.

SUMMARY OF WORKOVER:

11-18-80 Moved in and rigged up pulling unit. Rig to pull tubing - tubing stuck - parted tubing - wait on fishing tool - fished tubing and parted it again. Shut down for night.

11-19-80 Rigged up Dia-log. Attempted to back off tubing - Shut down for night.

11-20-80 Bleed pressure off well - run sand-line down hole - back off tubing. Rig down Dia-log. Pull and lay down tubing. Shut down for night.

11-21-80 Changed out braden head - bleed pressure off wellhead. Picked up Reda pump and started in hole. Had to pull Reda and repair cable. Run Reda in hole. Shut down for night.

11-22-80 To Windy to rig down
Start Reda

12-9-80 Move in and rig up pulling unit. Picked Reda pump and stood back. Picked up sand-line with sucker bars and tried to knock out stinger. in packer, unsuccessful.

12-10-80 Wait on pipe, pick up pipe and packer. Shut down for night, drain pump and lines.

12-11-80 Finish picking up tubing - hook up Halliburton and acidize well. Tubing at 5267' - spotted acid - attempted to set packer - wouldn't set - pumped acid. Maximum pressure 600 PSY Minimum pressure 290PSY Type acid used 2,000 gallons 15% MSA. Total load used 81 barrels.

12/12-80 Rig down and move pulling unit off.

1-11-80 Well flowing at the rate of 2000 BFPD 40 BOPD 1960 BWPD 98% W.C.

EAST POPLAR UNIT NO. 104

WORKOVER HISTORY NO. 2

Lease and Well Number: East Poplar Unit No. 104
Field: East Poplar Unit County: Roosevelt State: Montana
Well Location: NW SW SE Section 14, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: June 8, 1958 Date Last Workover: November 1980
Producing Zone: C-3 Zone Perforations: 5921'-5926'
T.D.: 5969' PBDT: 5946' Cumulative Production: 420,028 BO
8,387,998 BW Latest Test: 7-13-92 8 BOPD 805 BWPD 99% WC

JUSTIFICATION FOR WORKOVER:

This well is currently producing from the C-3 Zone at 5921'-26' at the rate of 12 BOPD and 798 BWPD. It is proposed to perform a MOC Polymer squeeze on this well. It should lower the water cut and increase oil production.

SUMMARY OF WORKOVER:

- 8-20-92 Move in rig up pulling unit and rig up mud pump and unload mud.
- 8-21-92 Start rig and start mud pump. Start mixing mud. Mix 140 bbls total mud. Pumped 105 bbls down casing. Stop pump 35 bbls down tubing well dead. 10.3# mud. Pull tubing 128 jts of 2-7/8" tubing. 44 jts 2-3/8" tubing 2-7/8" to 2-3/8" swedge and collar. Left packer in hole. (2-7/8" pin on packer looking up)
- 8-22-92 Start rig and run tubing in hole to 5901.57'. Screwed into packer and pulled 3 to 4 1000 over string weight. Pull tubing and no packer. Mix 40 bbls mud and shut down.
- 8-23-92 Start rig and run spear to 5911'. Latch on packer and pull tubing and packer. Pick up wash pipe and shoe run into 5900'.
- 8-24-92 Start rig and rig up to drill. Start drilling from 5911' to 5913'. Drilled for 6 hours. Stop drilling pull tubing and tools. Shut down.
- 8-25-92 Start rig and run new shoe and tubing to 5913'. Start drilling drilled 6" fell through push packer to 5941'. Pull tubing and tools. Run packer to 5421.40' and set packer. Note! Model D Packer was stuck in the bottom of shoe and came out of the hole.

- 8-26-92 Start rig pressure up on casing and packer. O.K. Pump salt water down casing. Stop and set packer. Swab tubing, well started flowing. Rig down move off location.
- 9-22-92 Move in rig up pulling unit. Rig up HOWCO get injection rate 2 BPM at 525#. Mix 8000 gallon Polymer. Pump 2 BPM at 600# - 670#. Mix 7½ bbls MOC/one cement. Pump 5 bbls diesel, pump cement, pump 5 bbls diesel. Pump 43 bbls fresh water at 2 BPM at 820#. Shut well in rig down rig. Well to be left shut in until 9-28-92
- 10-16-92 Well test 9 BOPD 262 BWPD 96½ WC

C. A. WHITE
Sales and Service
Engineering Department

nick
6-30-58

C. A. WHITE
Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

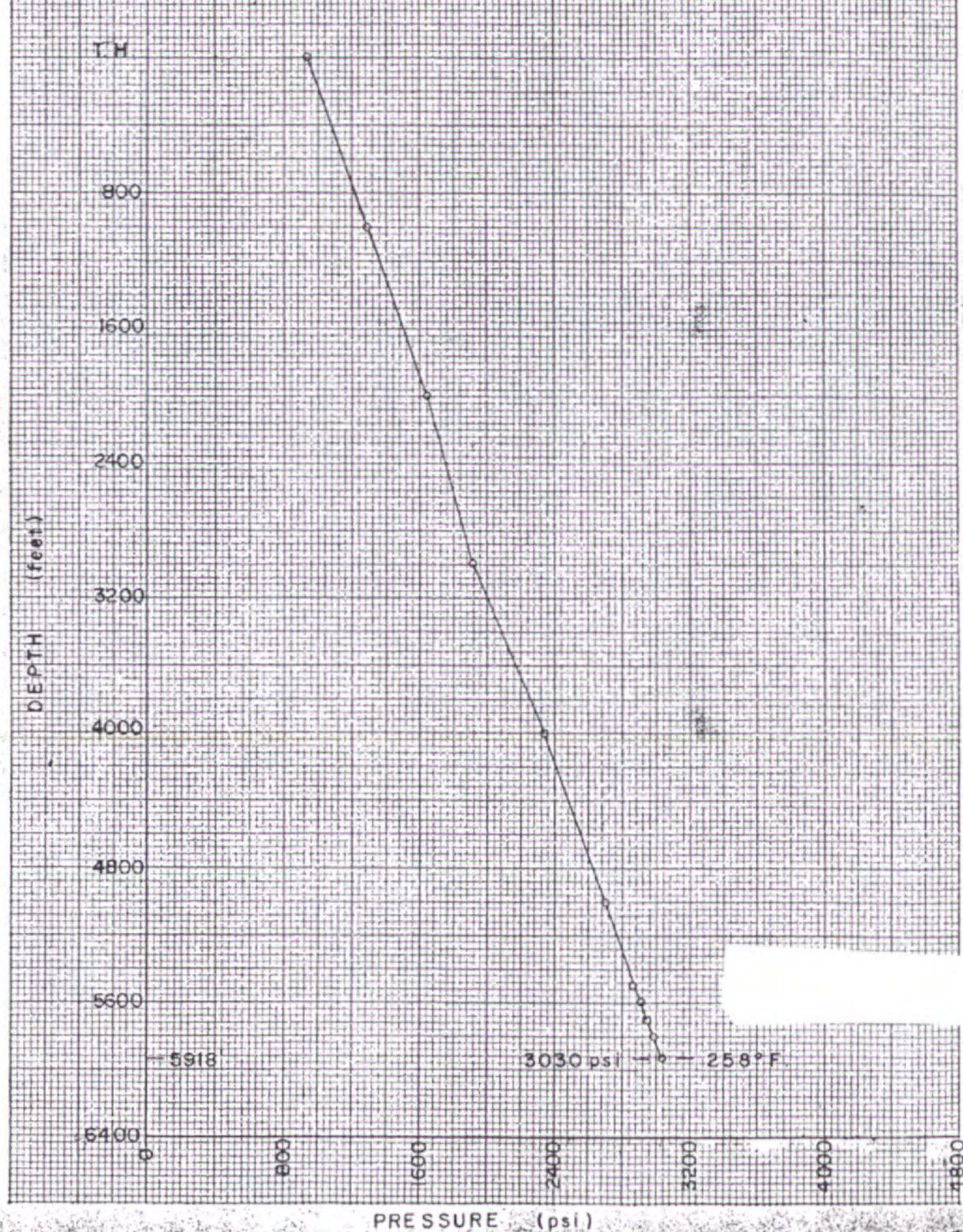
Company MURPHY CORPORATION Field EAST POPLAR Lease and Well 104
County State MONTANA Date JUNE 23, 1958

T. D. Formation C - 3 ZONE
Elevation 2208 G.L. Casing 5 1/2"
Perforation 5921 - 26 ft. Tubing 2"
Datum Point 3600'

DEPTH (FT)	EXTENSION (IN)	PRESSURE (PSI)	GRADIENT (#/100')
TOP HOLE946	930	36.0
1000	1.335	1290	35.5
2000	1.719	1645	27.0
3000	2.102	1915	42.5
4000	2.478	2340	35.0
5000	2.854	2690	33.0
5500	3.033	2855	45.0
5600	3.078	2900	35.0
5700	3.108	2935	35.0
5800	3.147	2970	50.8
5918	3.216	3030	

REMARKS: 1. All measurements are from GROUND LEVEL
2. TEMPERATURE at 5918 ft. 258 degrees F.
3. Water in top of B.H.P. BOMB

The Murphy Corporation
East Poplar Unit No. 104
Static Pressure Survey
June 23, 1958



C. A. WHITE
Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

Company MURPHY CORPORATION Field EAST POPLAR Lease and Well 104
County State MONTANA Date JUNE 23, 1958

T. D. Formation C - 3 ZONE

Elevation 2208 G.L. Casing 5 $\frac{1}{2}$ "

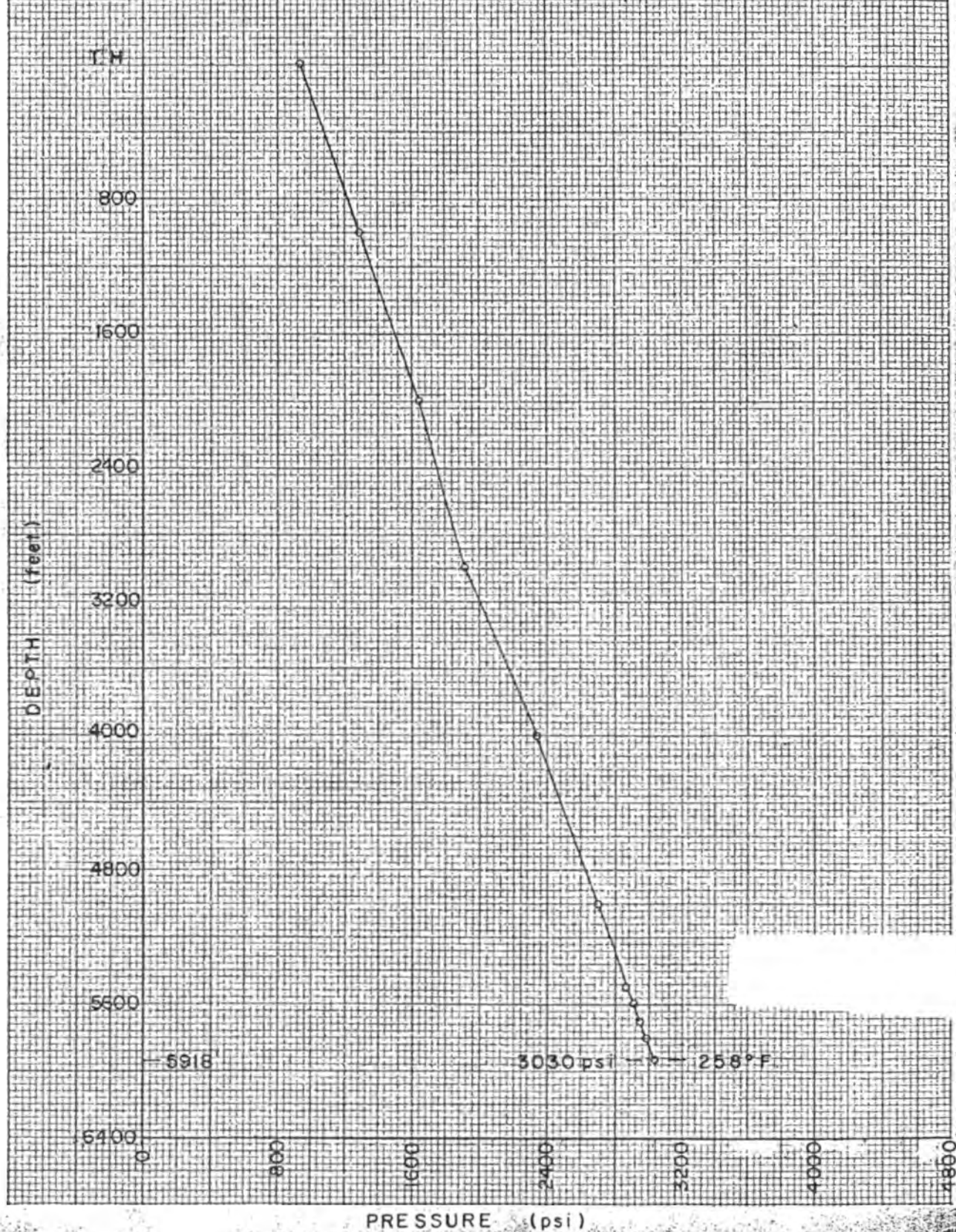
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The Murphy Corporation
East Poplar Unit No. 104
Static Pressure Survey
June 23, 1958



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Eng. Dept.

SUB-SURFACE SURVEY

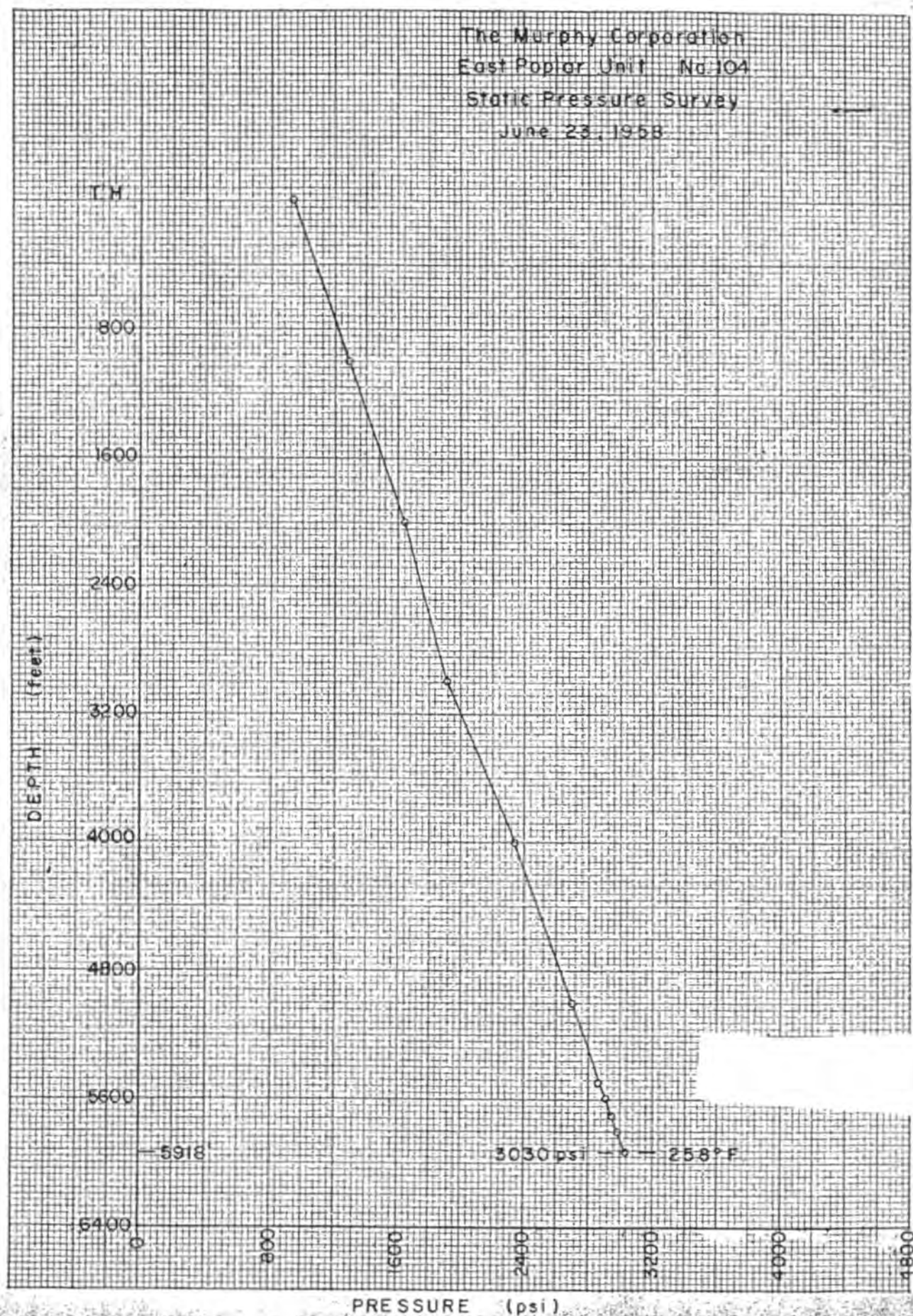
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The Murphy Corporation
East Poplar Unit No. 104
Static Pressure Survey
June 23, 1958



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Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

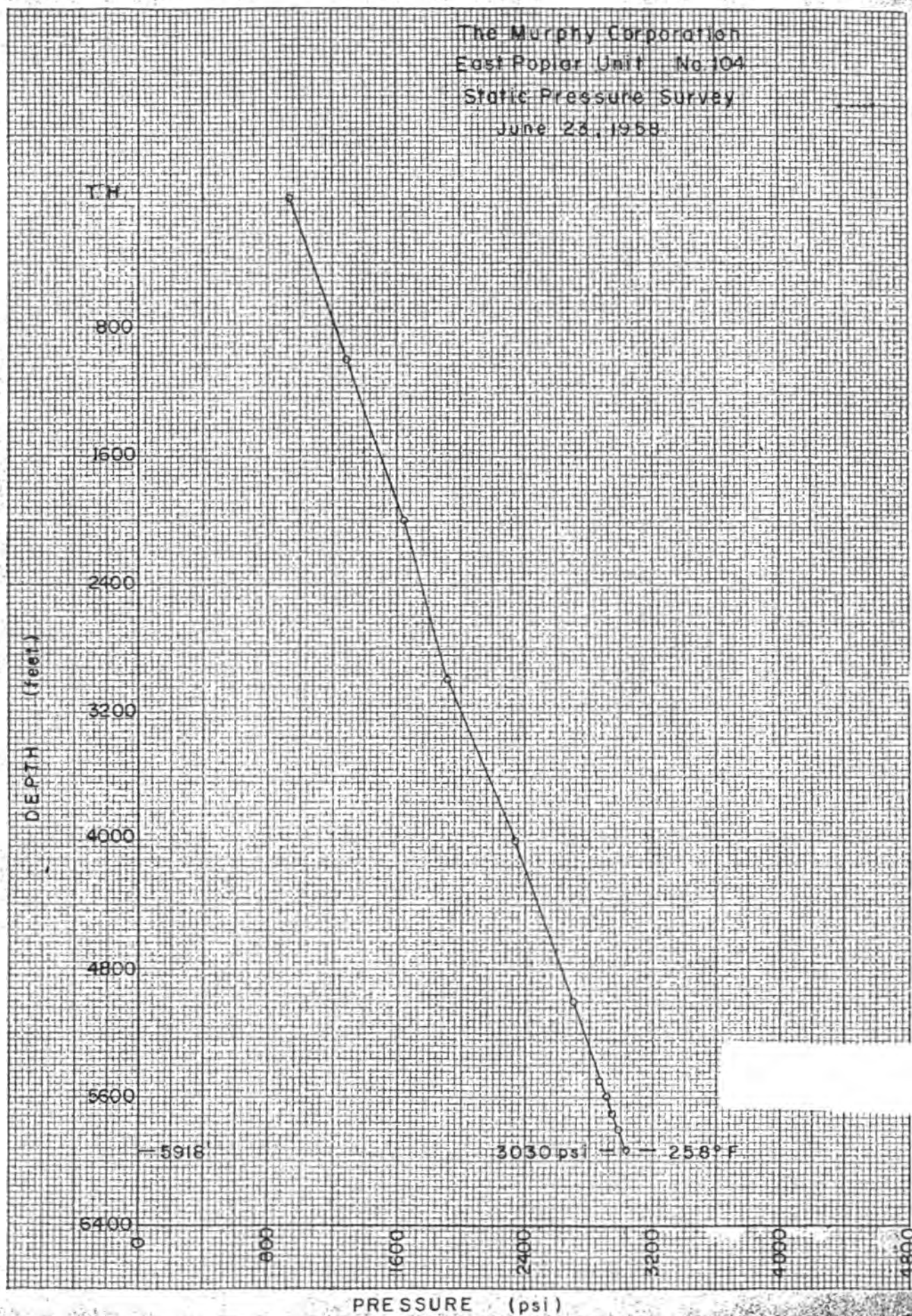
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The Murphy Corporation
East Poplar Unit No. 104
Static Pressure Survey
June 23, 1958



C. A. WHITE
Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

Company MURPHY CORPORATION Field EAST POPLAR Lease and Well 104
County State MONTANA Date JUNE 23, 1958

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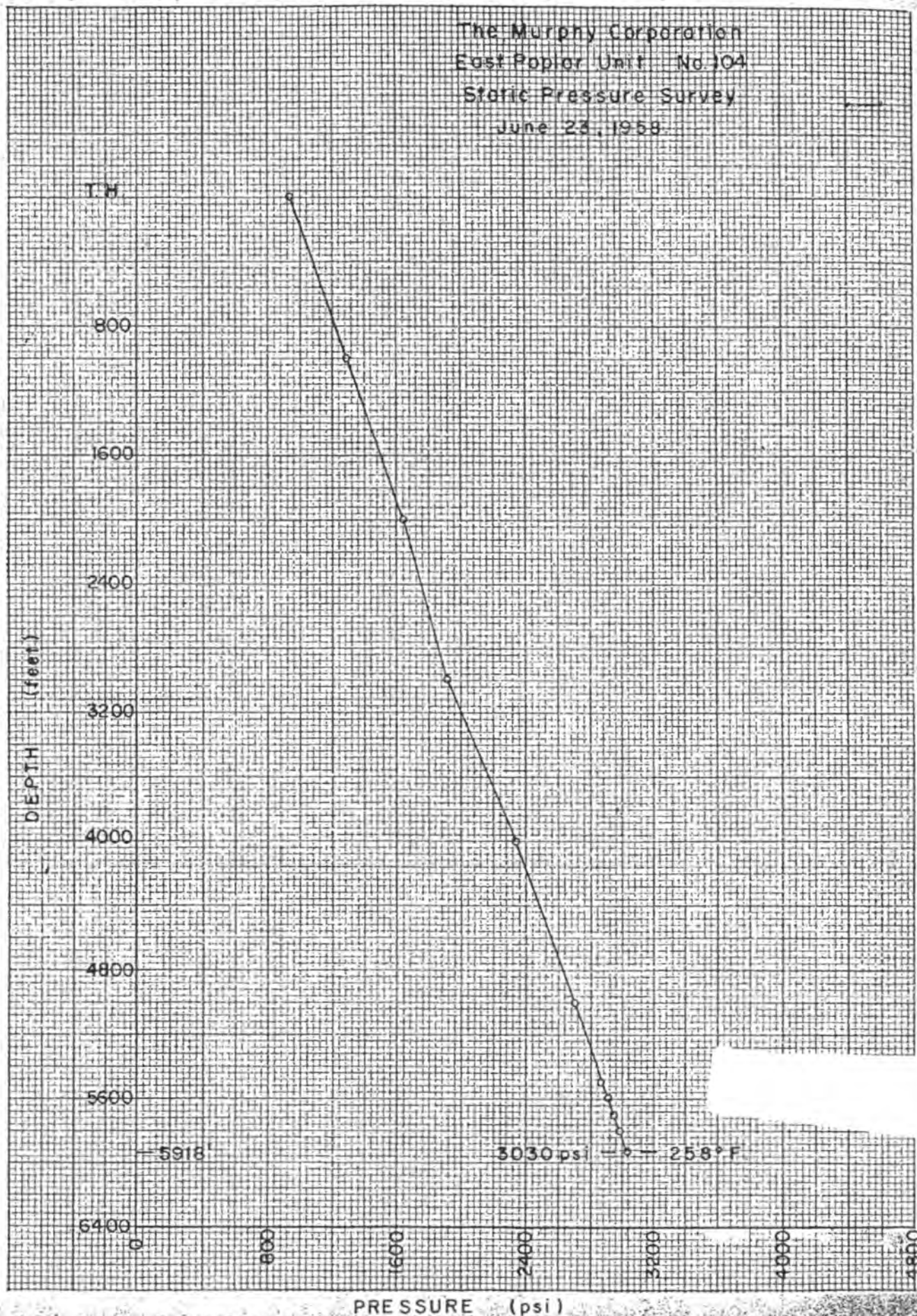
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DATA SHEETS

NO. 700-20

CHARLES ENGINEERING COMPANY, INC.
70 x 20 to the inch.

The Murphy Corporation
East Poplar Unit No 304
Static Pressure Survey
June 23, 1958



C. A. WHITE
Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

Company MURPHY CORPORATION Field EAST POPLAR Lease and Well 104
County State MONTANA Date JUNE 23, 1958

T. D. Formation C - 3 ZONE

Elevation 2208 G.L. Casing 5 1/2"

Perforation 5921 - 26 ft. Tubing 2"

Datum Point 3600'

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C. A. WHITE
Sales and Service
Eng. Dept.

SUB-SURFACE SURVEY

Company MURPHY CORPORATION Field EAST POPLAR Lease and Well 104
County State MONTANA Date JUNE 23, 1958

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Elevation 2208 G.L. Casing 5 $\frac{1}{2}$ "

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Datum Point 3600'

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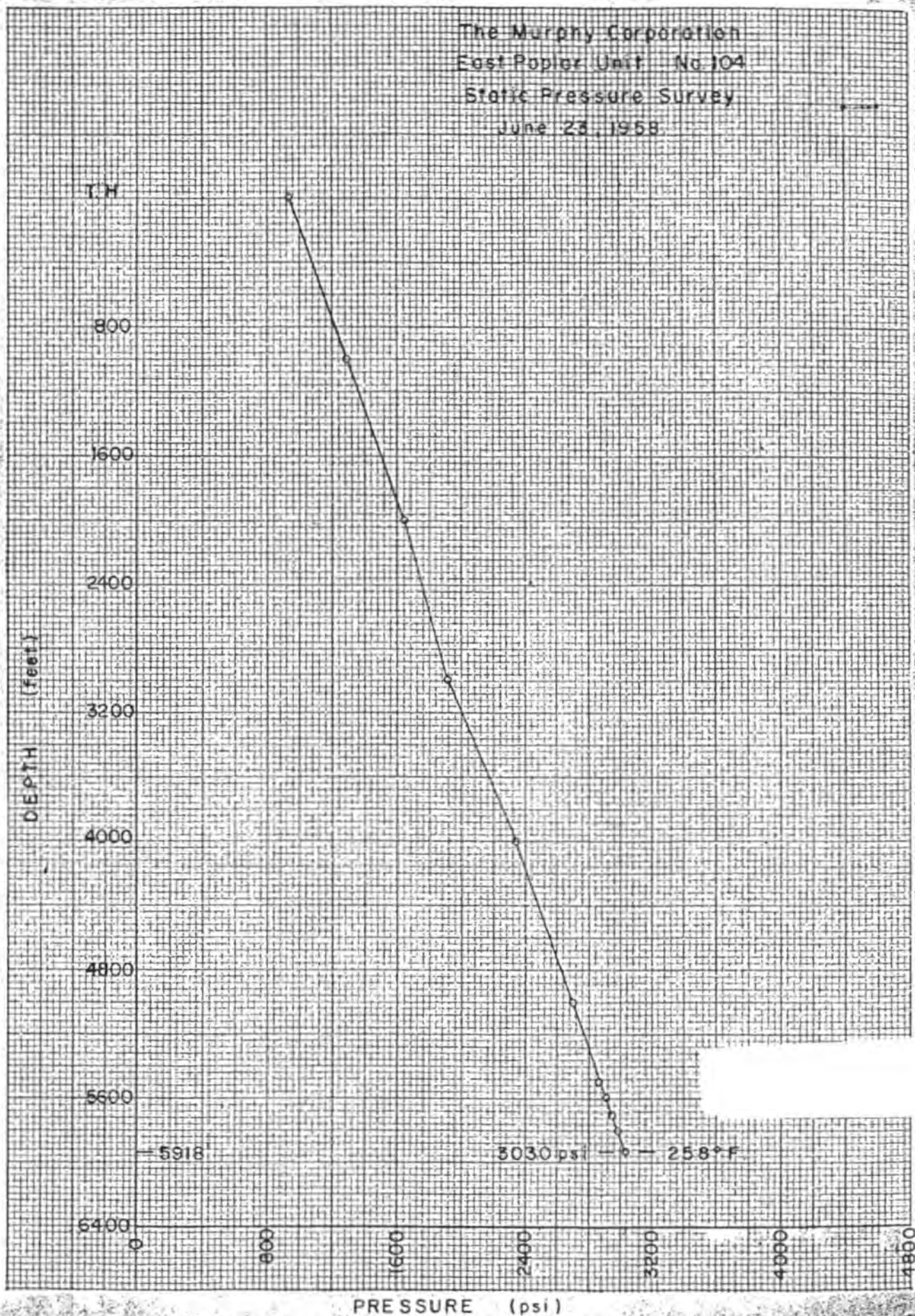
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DATA SHEETS

NO. 700-20

CHARLES BRUNING COMPANY, INC.
20 x 20 to the inch.

The Murphy Corporation
East Poplar Unit No 104
Static Pressure Survey
June 23, 1958



HALLIBURTON SERVICES JOB LOG

WELL NO. 10412 5 PM TICKET NO. 140007
CU IER MURPHY OIL PAGE NO. 12-11-80
JOB TYPE 2000 gal 152 MCA DATE 12-11-80

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	10:11	2				170		START DRILL
	10:24	2	27.8			150		DRILL SPOTTED
								SET P.R.
								PACKER WOULD NOT SET
								DECISION MADE TO RUN
								THE JOB ANYWAY.
	10:34	.8				500		START DISPLACEMENT.
	10:38	.8	30.6			550		DRILL @ PERFS
	10:52	.8	43.6			600		BREAKDOWN TO 290 PSI
	11:03	.8	11.8			290		START FLUSH
	11:10	.9	54.5			290		1/2 DRILL DISPLACED
	11:31	1.2	87.1			350		DRILL DISPLACED
						290		INSTANT SHUT IN
						600		MAX PRESSURE
						290		MIN "
						1145		Avg "
		1.2						MAX RATE
		.8						MIN "
		1						Avg "
								TOTAL LOAD PI RALS

CUSTOMER

HALLIBURTON SERVICES JOB SUMMARY

FORM 1012 R-2

DIVISION

HALLIBURTON
LOCATION

GENERAL

Glendide, MT

BILLED ON
TICKET NO.

895509

WELL DATA

FIELD E.P.U. SEC. TWP. RNO. COUNTY ROOSEVELT STATE MT

FORMATION NAME MADISON TYPE

FORMATION THICKNESS FROM TO

INITIAL PROD. OIL SPD. WATER SPD. GAS MCFD

PRESENT PROD. OIL SPD. WATER SPD. GAS MCFD

COMPLETION DATE MUD TYPE MUD WT.

PACKER TYPE BAKER SET AT 5910

BOTTOM HOLE TEMP. PRESSURE

MISC. DATA TOTAL DEPTH

JOB DATA

TOOLS AND ACCESSORIES		
TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 12-11	DATE 12-11	DATE 12-11	DATE 12-11
TIME 0300	TIME 0730	TIME 10:14	TIME 11:31

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
<u>THOMPSON</u>	<u>2539 VAN</u>	<u>Glendide</u>
<u>REINHOLD</u>	<u>5898</u>	<u>"</u>
<u>RUFF</u>	<u>AREA TRK</u>	<u>"</u>
	<u>EQS</u>	<u>"</u>
	<u>TRANSPORT</u>	<u>"</u>

MATERIALS

TREAT. FLUID DENSITY LB/GAL API

DISPL. FLUID DENSITY LB/GAL API

PROP. TYPE SIZE LB.

PROP. TYPE SIZE LB.

ACID TYPE GAL.

ACID TYPE MCA GAL. 3000 15

ACID TYPE GAL.

SURFACTANT TYPE GAL. IN

HE AGENT TYPE GAL. IN

FLUID LOSS ADD. TYPE GAL-LB. IN

GELLING AGENT TYPE GAL-LB. IN

FRIC. RED. AGENT TYPE GAL-LB. IN

BREAKER TYPE GAL-LB. IN

BLOCKING AGENT TYPE GAL-LB.

PERFFAC BALLS TYPE QTY.

OTHER

OTHER

DEPARTMENT STIM

DESCRIPTION OF JOB 1000 gal 15% MCA

JOB DONE THRU: TUDING ☒ CASING ☐ ANNULUS ☐ TSG./ANN. ☐

CUSTOMER REPRESENTATIVE X Gerald Thompson

HALLIBURTON OPERATOR A. Thompson COPIES REQUESTED

CEMENT DATA

STAGE	NUMBER OF BAGS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

PRESSURES IN PSI SUMMARY VOLUMES

CIRCULATING 180 DISPLACEMENT 1000 PRESURSH: BBL-GAL. TYPE

BREAKDOWN 1000 MAXIMUM 1000 LOAD & SKDN: BBL-GAL. PAD: BBL-GAL.

AVERAGE 445 FRACTURE GRADIENT TREATMENT: BBL-GAL. 48 DISPL: BBL-GAL. 33

SHUT-IN: INSTANT 200 5-MIN. 15-MIN. CEMENT SLURRY: BBL-GAL.

HYDRAULIC HORSEPOWER TOTAL VOLUME: BBL-GAL. 81

ORDERED AVAILABLE USED REMARKS

AVERAGE RATES IN BPM

TREATING 2 DISPL. 1 OVERALL 1

CEMENT LEFT IN PIPE

PERT REASON

CUSTOMER

CUSTOMER
11/11/11
E.P.U.
104
12-14-80



WORK ORDER CONTRACT AND PRE-TREATMENT DATA

FORM 1908 R-2

A Division of Halliburton Company
DOWNEY, OKLAHOMA 73031ATTACH TO
INVOICE & TICKET NO. _____

DISTRICT _____

DATE _____

TO: HALLIBURTON SERVICES

YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE

THE SAME AS AN INDEPENDENT CONTRACTOR TO:

(CUSTOMER)

AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 1024 LEASE ADU SEC. _____ TWP. _____ RANGE _____FIELD ADAR COUNTY ADAR STATE MT OWNED BY ADAR

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME MAA-111-3 TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT 290

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCFPRESENT PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING		15.5	5.5		1014	
LINER						
TUBING			2.375			
OPEN HOLE						SHOTS/FT.
PERFORATIONS				7.5	1014	
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☒ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☐ HYDRAULIC HORSEPOWER ORDERED _____

CUSTOMER OR HIS AGENT STATES THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

As consideration, the above-named Customer agrees:

- To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.
- Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.
- Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton.
- Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.
- Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.
- Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.
- Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.
- Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.
- Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.
- Upon Customer's default in the payment of Customer's account 60 days after date of invoice, such account will thereafter be subject to interest until paid. In the event it becomes necessary to employ an attorney to enforce collection of such account, Customer agrees to pay all collection costs and attorney fees in the amount of 20 per cent of the amount of the unpaid account.
- Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT
THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.SIGNED Harold H. Hargrave
CUSTOMER

DATE _____

TIME _____ A.M. P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with
in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

FORM 1908 R-11

WELL NO.—FARM OR LEASE NAME 104 EPII		COUNTY Adair	STATE MT	CITY / OFFSHORE LOCATION	DATE 7-12-10
CHARGE TO Murphy Corp		OWNER Same		TICKET TYPE (CHECK ONE) SERVICE <input checked="" type="checkbox"/> SALES <input type="checkbox"/>	
ADDRESS		CONTRACTOR H & H Well Serv		LOCATION 1 Oilfield	
CITY, STATE, ZIP		SHIPPED VIA Conv. Veh.		LOCATION 2 Refinery	
WELL TYPE Oil		WELL CATEGORY Workover		LOCATION 3	
WELL PERMIT NO.		DELIVERED TO Loc		CODE	
TYPE AND PURPOSE OF JOB 718 Hydraulic Service		ORDER NO.		REFERRAL LOCATION	
		B-			

As consideration, the above-named Customer agrees to pay Halliburton in accordance with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	L O C	ACCOUNT	DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT	
					QTY	MEAS	QTY	MEAS			
000-119		1		MILEAGE	30	mi	1	mi	2.00	20.00	20
000-117		2		mileage	80	mi	1	mi	2.00	20.00	20
000-131		1		MATERIAL Del Chg	2	hr	1	hr	5.00	10.00	10
009-134	009-019	1		Pump Chg	542	ft				115.00	115
999-060				Engineering Charge	1	hr				7.00	7
046-085		2		Patchwork Chg	1	hr				1.00	1
158-043		1		Hydraulic Service	3.15	gal			4.00	12.60	12
313-394		1		FE-15	6	lbs			2.00	12.00	12
	516,00220	1		HE-300	500	lbs			0.20	100.00	100
		1		CX-300	7	lbs			1.00	7.00	7

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO.

B-

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X K. K. K.
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X _____
CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

HALLIBURTON APPROVAL

CUSTOMER

SUB TOTAL

APPLICABLE TAXES WILL BE ADDED ON INVOICE.

15761.20

JOB SUMMARY

DIVISION WESTERN
HALLIBURTON LOCATION Williston

BILLED ON 280 753
TICKET NO

FIELD EPH SEC 14 TWP 28N RANG 51E COUNTY Roosevelt STATE MT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD _____

PRESENT PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD _____

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT 5421

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH 6000

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	<u>U</u>	<u>15.5</u>	<u>5.5</u>	<u>KB</u>	<u>6000</u>	
LINER						
TUBING	<u>U</u>	<u>6.5</u>	<u>2.375</u>	<u>KB</u>	<u>5421</u>	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				<u>5921</u>	<u>5926</u>	
PERFORATIONS						
PERFORATIONS						

TOOLS AND ACCESSORIES		
TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. API _____

DISPL. FLUID _____ DENSITY _____ LB/GAL. API _____

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ %

ACID TYPE _____ GAL. _____ %

ACID TYPE _____ GAL. _____ %

SURFACTANT TYPE _____ GAL. _____ IN

NE AGENT TYPE _____ GAL. _____ IN

FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN

GELLING AGENT TYPE _____ GAL.-LB. _____ IN

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN

BREAKER TYPE _____ GAL.-LB. _____ IN

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFAC BALLS TYPE _____ QTY. _____

OTHER 5 6 lbs. #100 A Spt, 60# HE-300/1000

OTHER 1.5 gal CX-350/1000 to make 8000 gal 4E-300

JOB DATA

CALLER OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE <u>9-22-92</u> TIME <u>0500</u>	DATE <u>9-22-92</u> TIME <u>0715</u>	DATE <u>9-22-92</u> TIME <u>0930</u>	DATE <u>9-22-92</u> TIME <u>1415</u>

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
<u>W. Keel</u>	<u>40968</u> <u>P/U</u>	<u>Williston</u>
<u>B. Simonsen</u>	<u>5709/77271</u> <u>ADC RCM</u>	<u>"</u>
<u>D. Dutke</u>	<u>Intchmire</u>	<u>Bel Field</u>
<u>B. Richards</u>	<u>materials</u>	<u>"</u>
<u>J. Brophy</u>	<u>Supr.</u>	<u>Williston</u>

DEPARTMENT 5001

DESCRIPTION OF JOB Squeeze Backs w/ Hydrochase

SERVICE

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG/ANN. ☒

CUSTOMER REPRESENTATIVE X Ray Keel

HALLIBURTON OPERATOR W. H. Keel COPIES REQUESTED _____

CEMENT DATA

STAGE	NUMBER OF SACKS	CEMENT	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.
<u>50</u>		<u>MICRO MATRIX</u>		<u>5</u>	<u>Diesel 225gal, MOC-A 5gal</u>		<u>12.5</u>

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER _____

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM _____

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE _____

FEET _____ REASON _____

SUMMARY

PRESLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. _____

CEMENT SLURRY: BBL.-GAL. _____

TOTAL VOLUME: BBL.-GAL. _____

VOLUMES

REMARKS

See Job Log

WORK ORDER CONTRACT
AND PRE-TREATMENT DATAATTACH TO
INVOICE & TICKET NO. 280753DISTRICT WillistonDATE 9-22-92

TO: HALLIBURTON SERVICES

YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE

THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Corp (CUSTOMER)
AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICINGWELL NO. 104 LEASE EPU SEC. 14 TWP. 28N RANGE 51EFIELD EPU COUNTY Roosevelt STATE MT OWNED BY Same

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT 5121

TOTAL DEPTH 6000 MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING	<u>U</u>	<u>15.5</u>	<u>5.5</u>	<u>KB</u>	<u>6000</u>	
LINER						
TUBING	<u>U</u>	<u>6.5</u>	<u>2.875</u>	<u>KB</u>	<u>5121</u>	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				<u>5921</u>	<u>5926</u>	
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☒ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☐ HYDRAULIC HORSEPOWER ORDERED _____Squeeze Perfs w/ Hydrochek Serv

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees:

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

- To pay Halliburton in accord with the rates and terms stated in Halliburton's current price list. Invoices are payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ attorneys to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.
 - To defend, indemnify, release and hold harmless Halliburton, its divisions, subsidiaries, parent and affiliated companies and the officers, directors, employees, agents and servants of all of them from and against any claims, liability, expenses, attorneys fees, and costs of defense to the extent permitted by law for:
 - Damage to property owned by, in the possession of, or leased by Customer, and/or the well owner (if different from Customer), including, but not limited to, surface and subsurface damage. The term "well owner" shall include working and royalty interest owners.
 - Reservoir, formation, or well loss or damage, subsurface trespass or any action in the nature thereof.
 - Personal injury or death or property damage (including, but not limited to, damage to the reservoir, formation or well), or any damages whatsoever, growing out of or in any way connected with or resulting from pollution, subsurface pressure, losing control of the well and/or a well blowout or the use of radioactive material.
- The defense, indemnity, release and hold harmless obligations of Customer provided for in this Section b) and Section c) below shall apply to claims or liability even if caused or contributed to by Halliburton's negligence, strict liability, or the unseaworthiness of any vessel owned, operated, or furnished by Halliburton or any defect in the data, products, supplies, materials, or equipment of Halliburton whether in the preparation, design, manufacture, distribution, or marketing thereof, or from a failure to warn any person of such defect. Such defense, indemnity, release and hold harmless obligations of Customer shall not apply where the claims or liability are caused by the gross negligence or willful misconduct of Halliburton. The term "Halliburton" as used in said Sections b) and c) shall mean Halliburton, its divisions, subsidiaries, parent and affiliated companies, and the officers, directors, employees, agents and servants of all of them.
- That because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the effectiveness of the products, supplies or materials, nor the results of any treatment or service, nor the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be liable for and Customer shall indemnify Halliburton against any damages arising from the use of such information.
 - That Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.
 - That Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.
 - To waive the provisions of the Deceptive Trade Practices - Consumer Protection Act, to the extent permitted by law.
 - That this contract shall be governed by the law of the state where services are performed or materials are furnished.
 - That Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT
THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED _____

CUSTOMER

DATE 9-22-92TIME 0900 (A.M.) P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

APPLICABLE TAXES WILL
BE ADDED ON INVOICE

East Poplar Unit #104

Location: NW SW SE Section 14, T28N, R51E

Spacing - 160

Elevation: 2208' Gr. = 2220' K.B.

Spudded: 7:00 P.M., May 6, 1958

Completed: June 8, 1958

T.D.: 5957' PBTD: 5944.5'

Prod. Zones: "C-3" Zone 5921'-5926'

Coring Intervals:

Core #1 4970'-4990', Rec. 17' Heath

Schlumberger Tops

	Depth	Datum	Thickness
Greenhorn	2444	-224	
Muddy Sd	3026	-806	
Dakota Silt	3246	-1026	
Piper Ls	4457	-2237	
Amsdem	4792	-2572	
Heath	*4960	-2740	
Otter	5110	-2890	
Kibbey Sd	*5264	-3044	
Kibbey Ls	5414	-3194	
Madison	5513	-3293	
A-1	**5594	-3394	4'
A-2	**5605	-3385	6'
A-3	**5620	-3400	6'
A-4	**5638	-3418	24'
B-1	**5754	-3534	9'
B-2	**5772	-3552	15'
B-3	**5794	-3574	6'
B-4	**5826	-3606	5'
C-1	**5902	-3682	?
C-3	**5819	-3699	10'
C-4	**5945	-3725	?
C-5	**5965	-3745	?

**Probable Prod. Zones (From Schl. W.L. Form. Tests structural position, etc.)

*Shows

Drill Pipe Corrections (Made)

4456' Driller = 4459' SLM (-4')

5365' Driller = 5365' SLM (0')

Schlumberger Wireline Formation Tests:

Test #1 5645', "A-4" Zone. Tool opn 14 min, 38 sec., SI 5 min. IBHP and FBHP less than 75#, SIBHP 2810#, Hydro 3125#. Rec 4 qts salt wtr, NS of oil. Wtr had pale yellow fluor. Res of mud filtrate 0.29 at 160 degrees F., res of rec sample 0.07 at 160 degrees F., chl 20,000 PPM.

Test #2 2460', Greenhorn. Misrun, tool plugged w/ lost circ.

Test #3 2460', Greenhorn. Misrun, tool plugged w/ lost circ.

Test #4 5798', "B-3" Zone. Tool opn 16 min, 50 sec, SI 13 min. IBHP and FBHP less than 75#, SIBHP 2550#, Hydro 3200#. Rec. 2.5 quarts salt wtr, NS of oil. Wtr had pale yellow fluor. Res of mud filtrate 0.29 at 160 degrees F., res of rec sample 0.14 at 160 degrees F., chl 7,000 PPM

History Subsequent to Completion:

None

PRODUCTION &
INJECTION DATA

SURFACE EQUIPMENT

